District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources Department

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party: **Enterprise Field Services, LLC**	OGRID: **151618**
Contact Name: **Thomas Long**	Contact Telephone: **505-599-2286**
Contact email:**tjlong@eprod.com**	Incident # *(assigned by OCD)*: **NRM2005731060**
Contact mailing address: **614 Reilly Ave, Farmington, NM 87401**	

Location of Release Source

Latitude **36.78597** Longitude **-107.59033** *(NAD 83 in decimal degrees to 5 decimal places)*

Site Name **NEBU #345**	Site Type **Natural Gas Gathering Pipeline**
Date Release Discovered: **2/7/2020**	Serial Number *(if applicable)*: **NM 119620**

Unit Letter	Section	Township	Range	County
G	**29**	**30N**	**7W**	**San Juan**

Surface Owner: ☐ State ☒ Federal ☐ Tribal ☐ Private (*Name*: **BLM**)

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☐ Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
☒ Condensate	Volume Released (bbls): **3-5 BBLs**	Volume Recovered (bbls): **None**
☒ Natural Gas	Volume Released (Mcf): **< 1 MCF**	Volume Recovered (Mcf): **None**
☐ Other (describe)	Volume/Weight Released (provide units):	Volume/Weight Recovered (provide units)

Cause of Release On February 7, 2020, Enterprise discovered a release of natural gas from the NEBU #345 well tie. No liquids were released to the ground surface. No washes were affected. Repairs and remediation began on February 13, 2020, at which time Enterprise determined the release reportable per NMOCD regulation, due to the volume of impacted subsurface soil. Remediation was completed on February 14, 2020. The final excavation measured approximately 17 feet long by 13 feet wide by 7 feet deep. Approximately 72 cubic yards of hydrocarbon impacted soil was excavated and transported to a New Mexico Oil Conservation Division approved land farm facility. A third party closure report is included with this "Final." C-141.

Form C-141
Page 2

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: ***Each of the following items must be included in the closure report.***

☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC

☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)

☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)

☒ Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Jon E. Fields Title: Director, Environmental

Signature: Jon E. Fields Date: 9/23/2020

email: jefields@eprod.com Telephone: (713) 381-6684

OCD Only

Received by: Date:

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: Nelson Velez Date: 05/16/2022

Printed Name: Nelson Velez Title: Environmental Specialist – Adv

NEBU #345 Well Tie Pipeline
Release Closure Report

Unit Letter G, Section 29, Township 30 North, Range 7 West
Rio Arriba County, New Mexico

July 24, 2020

Prepared for:
Enterprise Field Services, LLC
614 Reilly Avenue
Farmington, New Mexico 87401

Prepared by:
Rule Engineering, LLC
501 Airport Drive, Suite 205
Farmington, New Mexico 87401

Rule Engineering, LLC
Solutions to Regulations for Industry

Enterprise Field Services, LLC
NEBU #345 Well Tie Pipeline
Release Closure Report

Prepared for:

Enterprise Field Services, LLC
614 Reilly Avenue
Farmington, New Mexico 87401

Prepared by:

Rule Engineering, LLC
501 Airport Drive, Suite 205
Farmington, New Mexico 87401

Heather M. Woods

Heather M. Woods, P.G., Area Manager

July 24, 2020

Table of Contents

Tables

Figures

Appendices

1.0 Introduction

This closure report summarizes the remedial activities undertaken at the NEBU #345 Well Tie Pipeline release site to remediate potential hydrocarbon impact according to closure criteria as outlined in 19.15.29 of the New Mexico Authority Code (NMAC).

1.1 Release Summary

Operator	Enterprise Field Services, LLC (Enterprise)		
Site Name	NEBU #345 Well Tie Pipeline Release		
Site Location Description	Unit Letter G, Section 29, Township 30 North, Range 7 West (N36.78597, W107.59033)		
Land Jurisdiction	United States Department of the Interior Bureau of Land Management (BLM)		
Discovery Date	February 7, 2020		
Release Source	Corrosion hole in pipeline		
Substance(s) Released	Pipeline liquids and natural gas		
Volume of Soil Transported for Disposal/Remediation	Approximately 72 cubic yards soil and 25 barrels of hydrovac cuttings	**Remedial Excavation Dimensions**	Approximately 17 feet by 13 feet and 7 feet deep
Disposal Facility	Envirotech Landfarm (Permit NM-01-0011)		

A topographic map of the location reproduced from the United States Geological Society quadrangle map of the area is included as Figure 1 and an aerial site map is included as Figure 2.

2.0 Closure Criteria Determination

The remediation standards for the release location are determined per 19.15.29 NMAC and are selected by depth to groundwater with a concentration of less than 10,000 milligrams per kilogram (mg/kg) total dissolved solids (TDS) and several additional factors outlined in Paragraph (4) of Subsection (C) of 19.15.29.12 NMAC. A summary of the determination and supporting documents are included in Appendix A.

Closure criteria for the soils impacted at the release location are determined by the *"less than or equal to 50 feet"* category of Table 1, 19.15.29.12 NMAC. These remedial standards are as follows:

- 10 mg/kg benzene per USEPA Methods 8021B or 8260B.
- 50 mg/kg total benzene, toluene, ethylbenzene, and xylenes (BTEX) per USEPA Method 8021B or 8260B;

Rule

- 100 mg/kg total petroleum hydrocarbons (TPH) as gasoline range organics (GRO), diesel range organics (DRO), and mineral range organics (MRO) per USEPA Method 8015M; and
- 600 milligrams per kilogram (mg/kg) chloride per United States Environmental Protection Agency (USEPA) Methods 300.0 or SM 4500-Cl B.

3.0 Field Activities

On February 13, 2020, Enterprise initiated repair and remediation activities at the location. West States Energy Contractors, Inc. provided heavy equipment operation and repair support. Rule Engineering, LLC (Rule) personnel provided excavation guidance and collected confirmation samples from the resultant excavation. The final repair excavation was measured approximately 17 feet by 13 feet by 7 feet in depth. Approximately 72 cubic yards of soil and 25 barrels of hydrovac cuttings were transported to the Envirotech Landfarm near Bloomfield, New Mexico for disposal/remediation. The repair excavation was backfilled with clean, imported material.

A depiction of the excavation with sample locations is included as Figure 3. A copy of the executed C-138 Solid Waste Acceptance Form is included in Appendix B. A photograph log is included in Appendix C. A copy of regulatory correspondence is included in Appendix D.

4.0 Confirmation Soil Sampling

Rule collected confirmation excavation soil samples (SC-1 through SC-5) from the sidewalls and base of the excavation. Each confirmation soil sample is a representative composite comprised of five equivalent aliquots of soil collected from the sampled area. Confirmation sample locations are shown on Figure 3.

Samples were field screened for volatile organic compounds (VOCs). Field screening for VOC vapors was conducted with a photoionization detector (PID). Before beginning field screening, the PID was calibrated with 100 parts per million (ppm) isobutylene gas. Soil samples collected for laboratory analysis were placed into laboratory supplied glassware, labeled, and maintained on ice until delivery to Hall Environmental Analysis Laboratory in Albuquerque, New Mexico. All samples were analyzed for BTEX per USEPA Method 8021B and TPH (GRO/DRO/MRO) per USEPA 8015D and chlorides per USEPA Method 300.0.

5.0 Laboratory Analytical Results

The laboratory analytical results were compared to the remediation standards for the site. A summary of constituent detections above the laboratory reporting limits is provided below:

- Benzene detections ranged from 0.070 mg/kg to 0.49 mg/kg, which are below the remediation standard of 10 mg/kg.
- Total BTEX detections ranged from 0.90 mg/kg to 2.4 mg/kg, which are below the remediation standard of 50 mg/kg.
- Total TPH detections ranged from 9.1 mg/kg to 27 mg/kg, which are below the remediation standard of 100 mg/kg.
- Chloride detections ranged from 69 mg/kg to 98 mg/kg, which are below the remediation standard of 600 mg/kg.

The concentrations of the remaining constituents were reported below the laboratory reporting limits, which are below each respective remediation standard. Laboratory analytical results are summarized in Table 1. Analytical laboratory reports are included in Appendix E.

6.0 Reclamation and Revegetation

The excavation was backfilled with clean, imported material. The area was contoured as near as possible to original grade and will be re-seeded with a BLM approved seed mixture.

7.0 Recommendation

Hydrocarbon impacted soils associated with the NEBU #345 well tie pipeline release have been excavated and transported to an approved landfarm for disposal/remediation. Laboratory analytical results for the confirmation samples collected from the excavation report benzene, total BTEX, and TPH concentrations below the remediation standards set forth for the release. Therefore, no further work is recommended.

8.0 Closure and Limitations

This report has been prepared for the exclusive use of Enterprise and is subject to the terms, conditions, and limitations stated in Rule's report and Service Agreement with Enterprise. All work has been performed in accordance with generally accepted professional environmental consulting practices. No other warranty is expressed or implied.

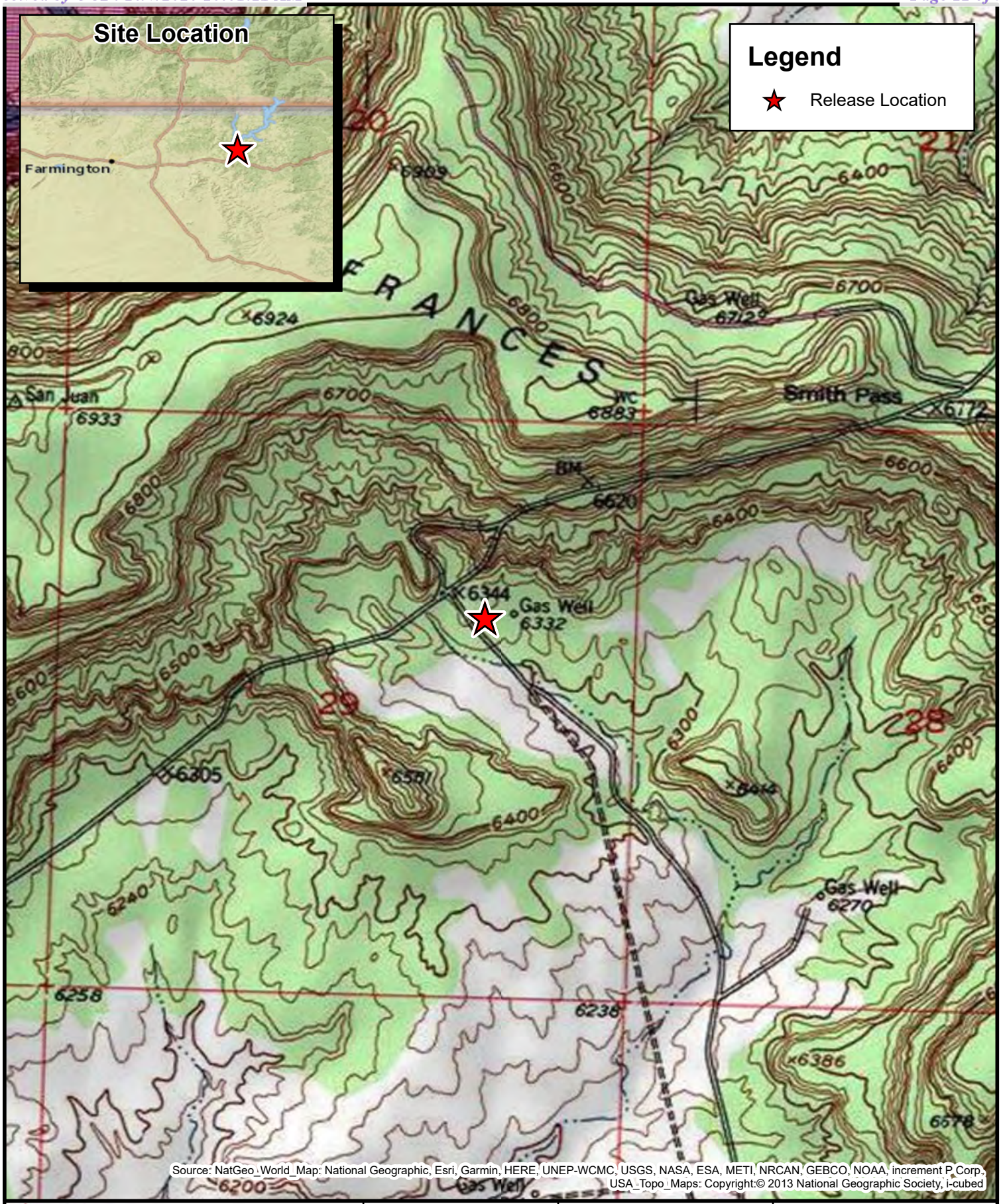
Table

Table 1. Summary of Laboratory Analytical Results
Enterprise Field Services
NEBU #345 Well Tie Pipeline Release
Rio Arriba County, New Mexico

Sample Name	Date	Approximate Sample Depth (ft bgs)	Sample Location	Laboratory Analytical Results									
				Benzene (mg/kg)	Toluene (mg/kg)	Ethylben-zene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH as GRO (mg/kg)	TPH as DRO (mg/kg)	TPH as MRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
Remediation Standard*				**10**	**NE**	**NE**	**NE**	**50**	**NE**	**NE**	**NE**	**100**	**600**
SC-1	2/14/2020	0 - 7	East Wall	0.14	0.71	<0.19	1.5	2.3	<19	<9.8	<49	ND	69
SC-2	2/14/2020	0 - 7	South Wall	<0.096	<0.19	<0.19	<0.39	ND	<19	<9.4	<47	ND	97
SC-3	2/14/2020	0 - 7	West Wall	0.070	0.37	<0.037	0.46	0.90	<3.7	<9.7	<49	ND	<60
SC-4	2/14/2020	0 - 7	North Wall	<0.090	<0.18	<0.18	<0.36	ND	<18	27	<44	27	98
SC-5	2/14/2020	7	Base	0.49	1.2	0.049	0.66	2.4	9.1	<9.8	<49	9.1	<60

Notes:
ft bgs - feet below grade surface
mg/kg - milligrams per kilogram
NE - not established
ND - not detected above laboratory reporting limits
BTEX - total benzene, toluene, ethylbenzene, and xylenes
TPH - total petroleum hydrocarbons
GRO - gasoline range organics
DRO - diesel range organics
MRO - mineral oil range organics
*Per Table 1 of 19.15.29.12 NMAC, based on category *"less than or equal to 50 feet" depth* to groundwater

Figures



Rule Engineering, LLC
Solutions to Regulations for Industry

0 400 800 1,600 2,400 Feet
1:14,000

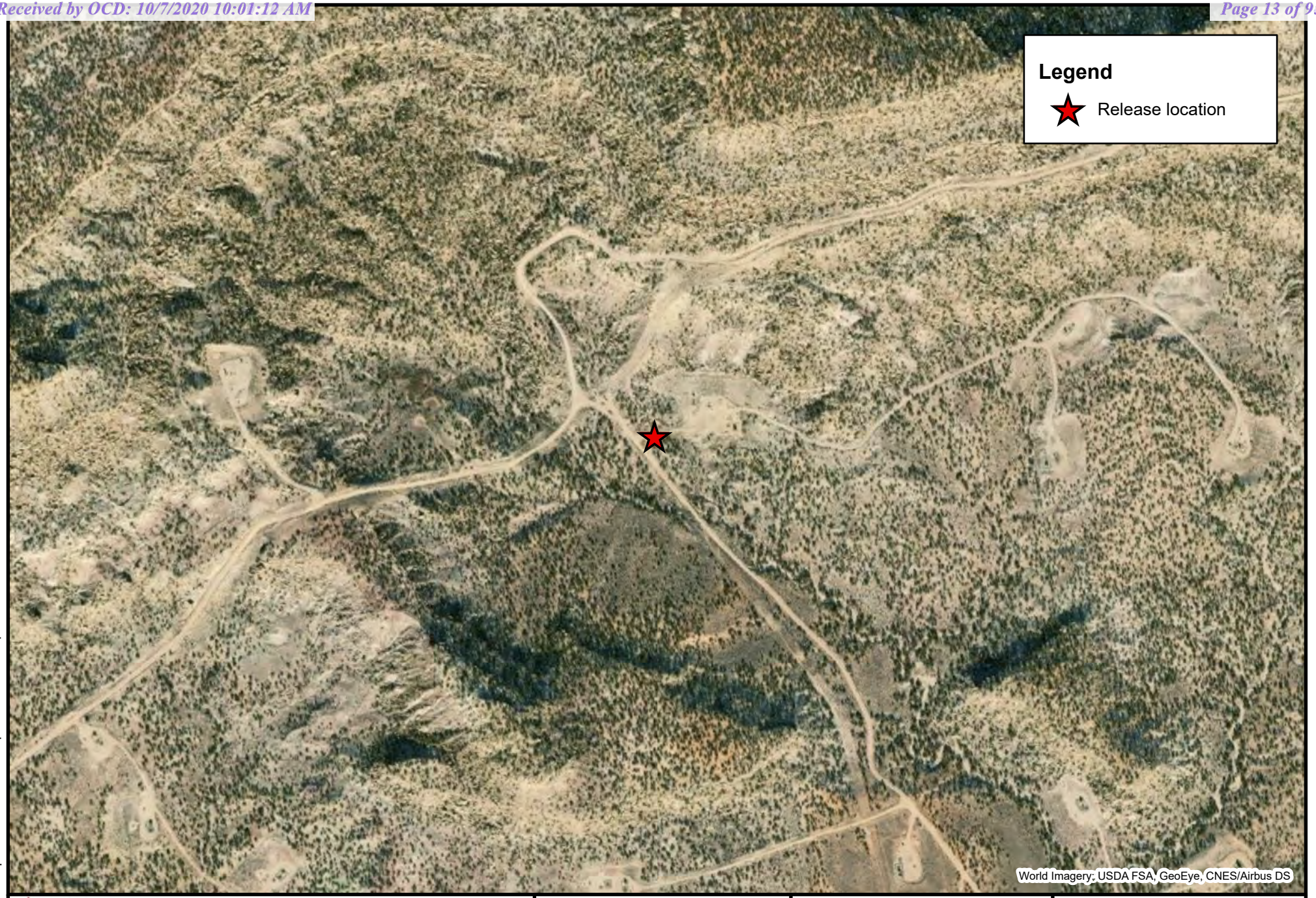
Enterprise Products

G-S29-T30N-R7W
N36.78597, W107.59033
Rio Arriba County, New Mexico

Figure 1
Topographic Site Map
NEBU #345

M:\27 GIS CAD\Enterprise Products\Enterprise Products.aprx

7/20/20



Rule Engineering, LLC
Solutions to Regulations for Industry

0 270 540 1,080 1,620 2,160 Feet

1:8,000

N

Enterprise Products

G-S29-T30N-R7W
N36.78597, W107.59033
Rio Arriba County, New Mexico

Figure 2
Aerial Site Map
NEBU #345

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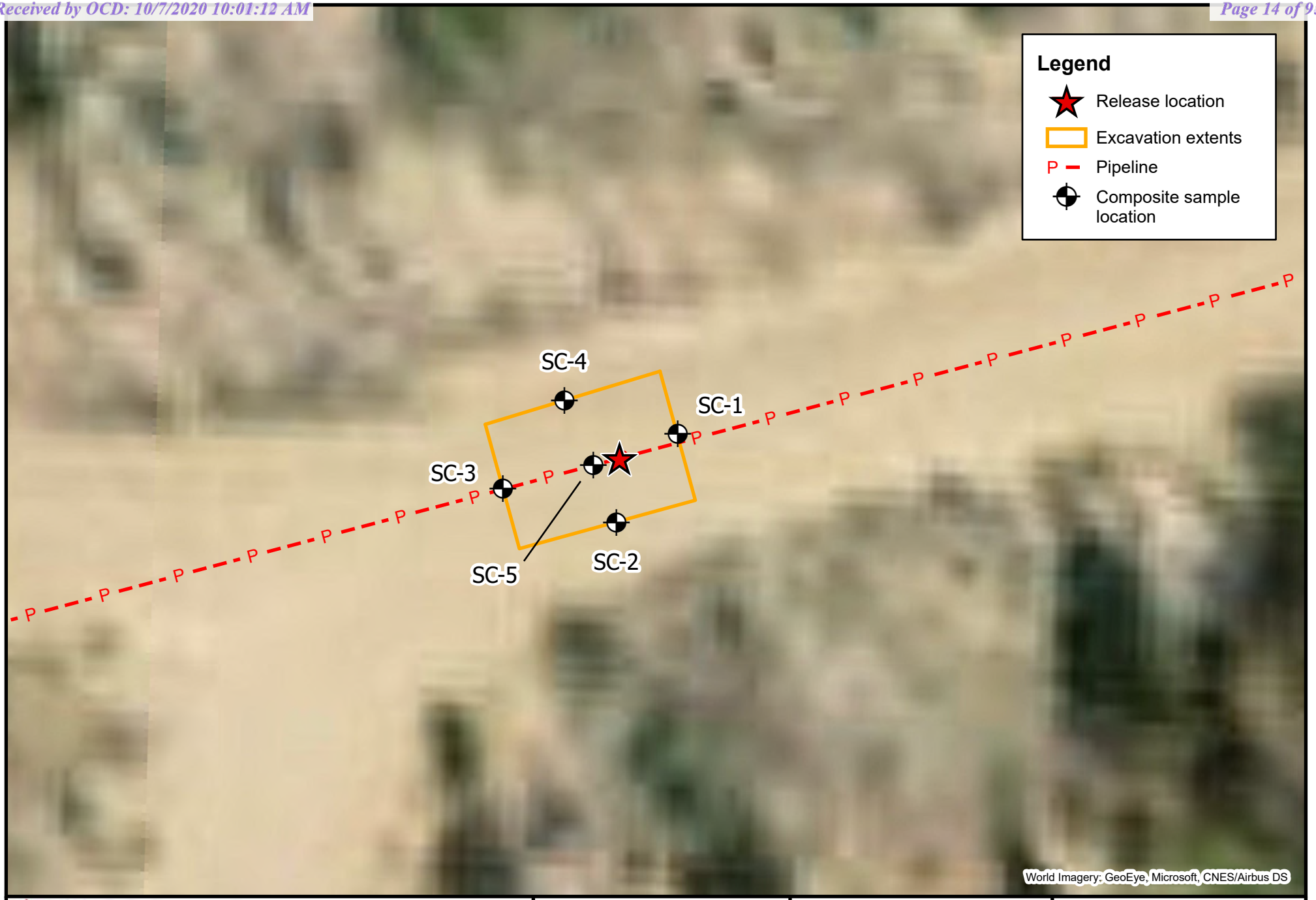
7/24/2020



Rule Engineering, LLC
Solutions to Regulations for Industry

0 5 10 20 30 Feet
1:140

N

Enterprise Products

G-S29-T30N-R7W
N36.78597, W107.59033
Rio Arriba County, New Mexico

Figure 3
Sample Location Map
NEBU #345

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7/24/2020

Appendix A

Closure Criteria Determination and Documentation

Closure Criteria Determination
NEBU #345 Well Tie Pipeline Release

A review of the release site characteristics based on Paragraph (4) of Subsection (C) of 19.15.29 NMAC, concluded that site closure criteria are determined by the ***"less than or equal to 50 feet"*** category of Table 1.

The release site characteristics are as follows:

- Depth to groundwater at the site is anticipated to be greater than 100 feet below ground surface based on the area's geology and geomorphology.
    - A search of the New Mexico Office of the State Engineer (NMOSE) Water Rights Reporting System reported one point of diversion (POD) within Sections 19, 20, 21, 28, 29, 30, 31, 32 and 33 of Township 30 North and Range 7 West. That POD is SJ 00035 with a reported depth to water of 467 feet below ground surface.
    - A search of the New Mexico Energy, Minerals and Natural Resources Department (EMNRD) Oil Conservation Division (OCD) online imaging database yielded 14 cathodic well records within a 1-mile radius of the site. Depth to groundwater reported for these cathodic wells ranges from 80 feet to 390 feet below ground surface.

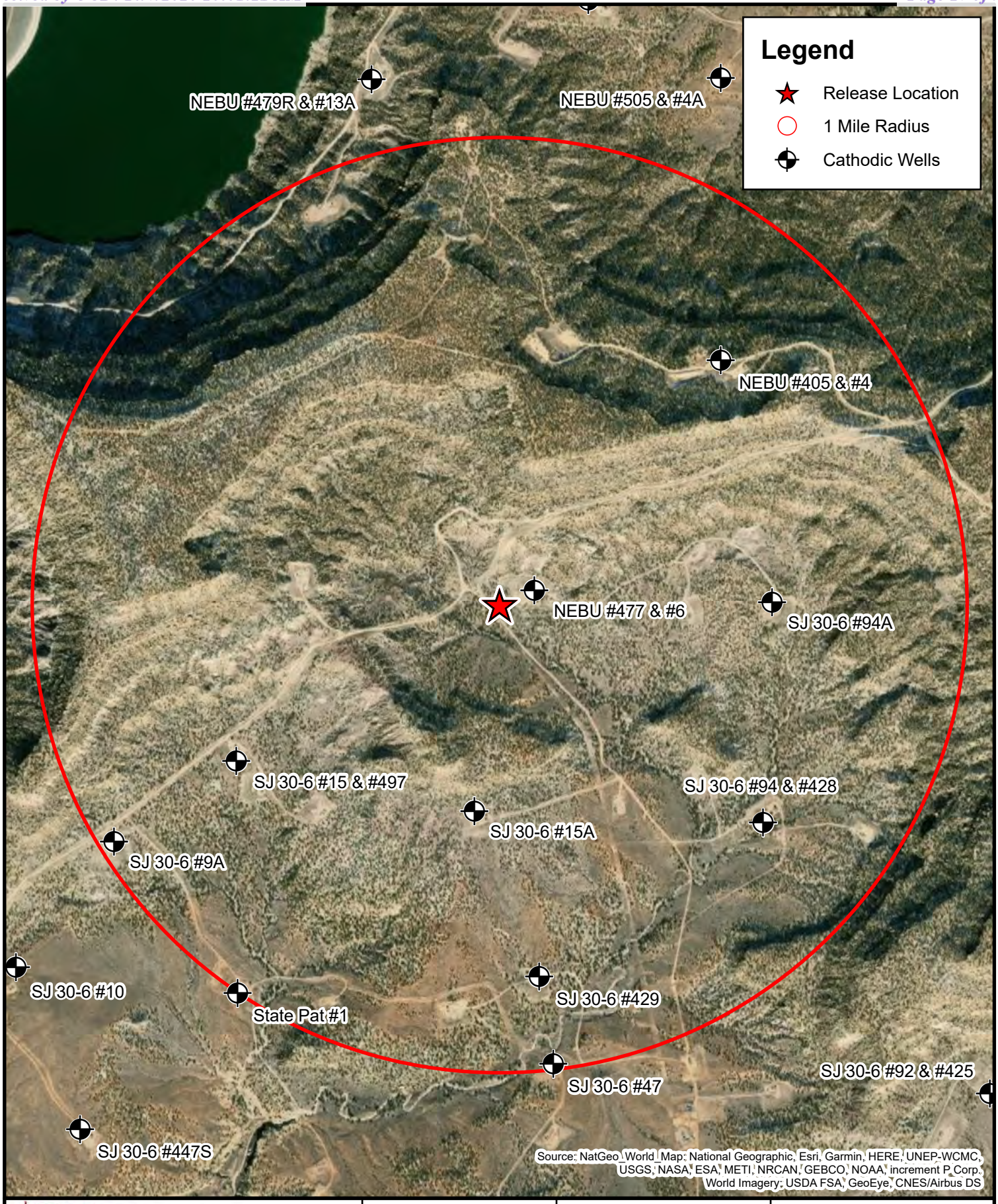
The location **is** within:

- 300 feet of any continuously flowing watercourse or any other significant water course. *A second-order ephemeral tributary wash to Gobernador Canyon is located approximately 126 feet east of the release site*.

The location is **not** within:

- ½ mile of known water sources, including private and domestic water sources.
- 200 feet of any lakebed, sinkhole or playa lake.
- 300 feet of an occupied permanent residence, school, hospital, institution or church.
- 500 feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes.
- incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to Section 3-27-3 NMSA 1978 as amended.
- 1,000 feet of any fresh water well or spring.
- the area overlying a subsurface mine.
- 300 feet of a wetland.
- an unstable area.
- 100-year floodplain.

Rule



Rule Engineering, LLC
Solutions to Regulations for Industry

0 500 1,000 2,000 3,000 Feet
1:17,200

Enterprise Products

G-S29-T30N-R7W
N36.78597, W107.59033
Rio Arriba County, New Mexico

Registered Water Well and Cathodic Well Map
NEBU #345

Document Path: M:\27 GIS CAD\Enterprise Products\Enterprise Products.aprx

7/24/2020

New Mexico Office of the State Engineer
Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced, O=orphaned, C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters) (In feet)

POD Number	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
SJ 00035	SJ	RA	2	2	4	33	30N	07W	270745	4072250*	547	467	80

Average Depth to Water: **467 feet**

Minimum Depth: **467 feet**

Maximum Depth: **467 feet**

Record Count: 1

PLSS Search:

Section(s): 19, 20, 21, 28, 29, 30, 31, 32, 33 **Township:** 30N **Range:** 07W

***UTM location was derived from PLSS - see Help**

Legend

- Release Location
- 300 Foot Radius

Approx. 126 feet to nearest watercourse - an ephemeral tributary to Gobernador Canyon

Rule Engineering, LLC
Solutions to Regulations for Industry
0 25 50 100 150
Feet
1:1,000

Enterprise Products

G-S29-T30N-R7W
N36.78597, W107.59033
Rio Arriba County, New Mexico

Watercourse and Occupied Structure Map
NEBU #345

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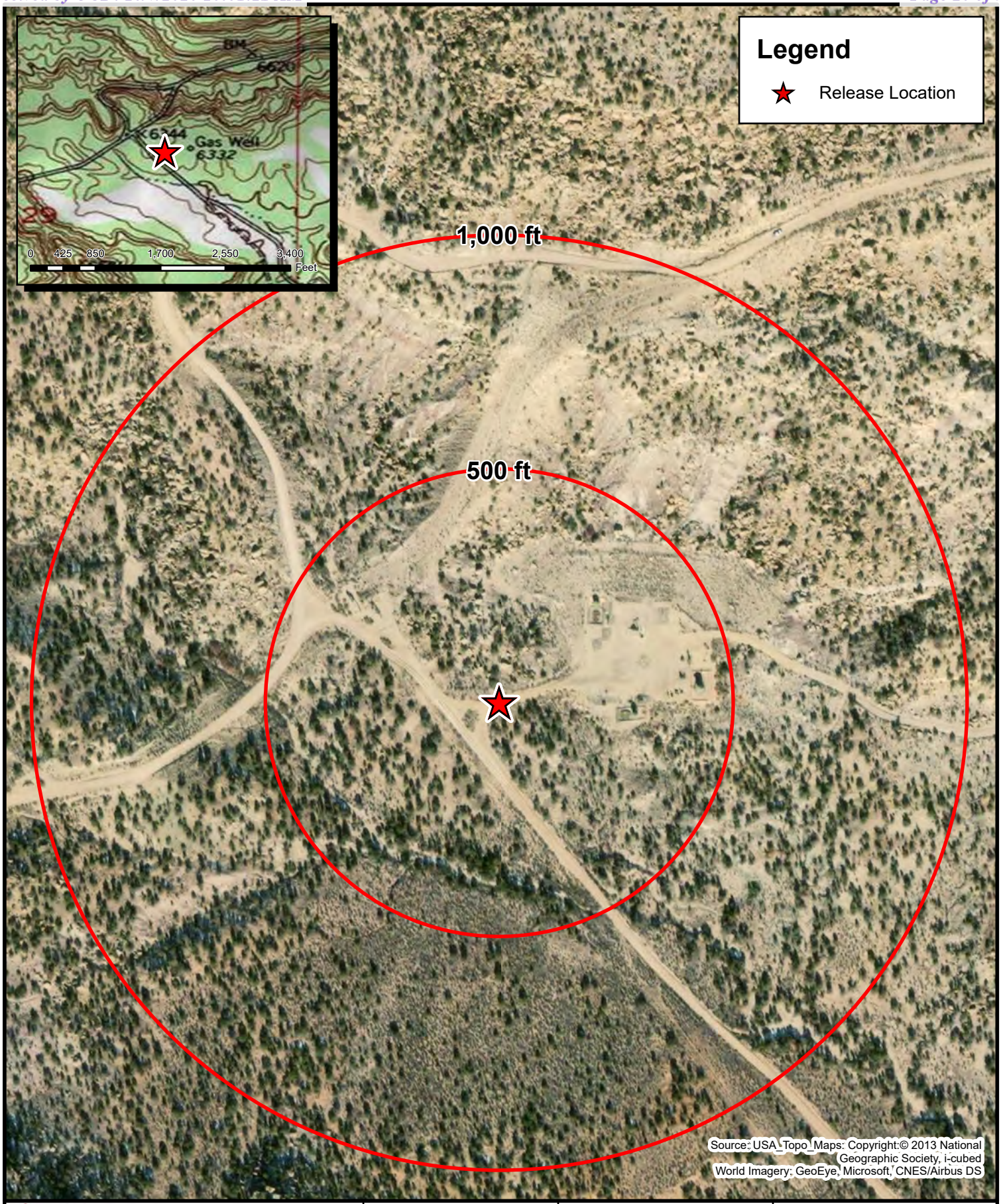
7/21/20



Rule Engineering, LLC
Solutions to Regulations for Industry

0 90 180 360 540
Feet
1:3,265

Enterprise Products

G-S29-T30N-R7W
N36.78597, W107.59033
Rio Arriba County, New Mexico

Water Wells and Natural Springs Map
NEBU #345

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7/24/2020

U.S. Fish and Wildlife Service
National Wetlands Inventory

NEBU #345 Wetland Map

July 22, 2020

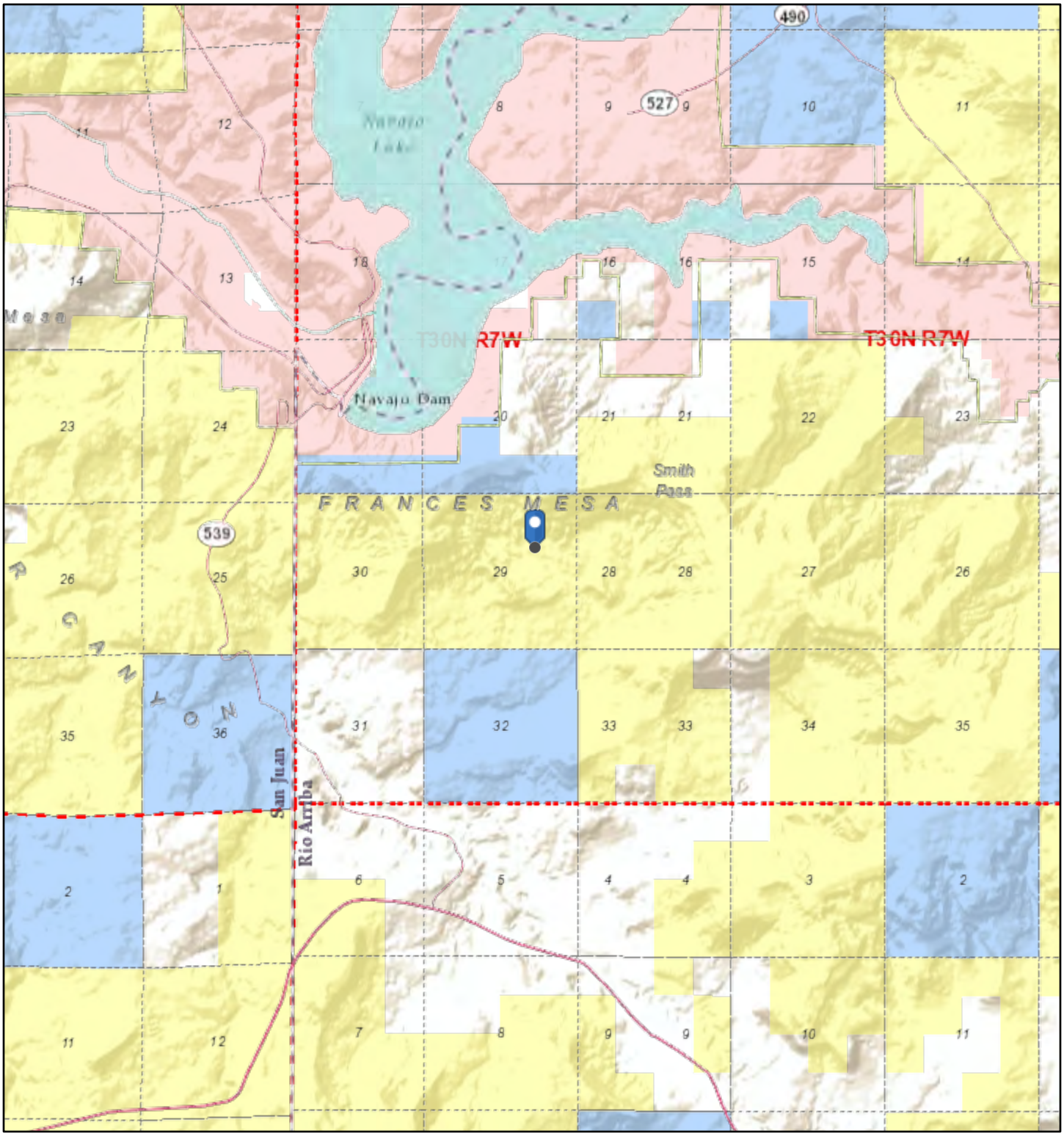
Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

National Wetlands Inventory (NWI)
This page was produced by the NWI mapper

NEBU #345 Mines Map



7/21/2020, 6:06:15 PM

1:72,224

0 0.5 1 2 mi

0 0.75 1.5 3 km

U.S. Bureau of Land Management - New Mexico State Office, Sources: Esri, USGS, NOAA, Sources: Esri, Garmin, USGS, NPS

EMNRD MMD GIS Coordinator

New Energy, New Mexico and Natural Resources Department (http://nm-emnrd.maps.arcgis.com/apps/webappviewer/index.html?id=1b5e577974664d689b47790897ca2795)

National Flood Hazard Layer FIRMette

FEMA

107°35'44" W 36°47'24" N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

107°35'6" W 36°46'55" N

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 7/21/2020 at 8:04 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

30-039-22027

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO
(Submit 3 Copies to OCD Aztec Office)

Operator: BLACKWOOD & NICHOLS CO. Location: Unit P, Sec. 20, Twp 30N, Rng 7W.

Name of Well/Wells or Pipeline Serviced NEBU 19A

Elevation 6790' Completion Date 7-11-93 Total Depth 325' Land Type* **Surface: F Mineral: SF-079060**

Casing, Sizes, Types & Depths 8-5/8" SCH 40 P.V.C. - 100', 7 7/8" OPEN HOLE

If Casing is cemented, show amounts & types used 20 sks Portland Zia I-II

If Cement or Bentonite Plugs have been placed, show depths & amounts used N/A

Depths & thickness of water zones with description of water when possible:

Fresh, Clear, Salty, Sulphur, Etc. Small amount of water 104' and 180' not enough for water sample.

Depths gas encountered: N/A

Type & amount of coke breeze used: Asbury - 4,000#

Depths anodes placed: 315' to 186'

Depths vent pipes placed: 325' to 4' above ground level

Vent pipe perforations: 325' to 125'

Remarks: Groundbed located 156' & W of North 239° of wellhead

If any of the above data is unavailable, please indicate so. Copies of all logs, including Drillers Log, Water Analyses & Well Bore Schematics should be submitted when available. Unplugged abandoned wells are to be included.

*Land Type may be shown: F-Federal; I-Indian; S-State; P-Fee.
If Federal or Indian, add Lease Number.

Signed by: James K. Aden Title: Operations Engineer Date: 8/11/93

BLACKWOOD & NICHOLS
CATHODIC GROUND BED
DRILLERS REPORT

P# SS-19 WELL# NEBU # 19A S 20 T 30 R 07

DEPTH	STRATA	NOTES	DEPTH	STRATA	NOTES
10		Brown Shale			
20		↑			
30		↕			
40		↕			
50		↓			
60		Sandstone			
70		↑			
80		↕			
90		Gray Shale			
100					

DRILLER jesse martinez INSPECTOR Jesse Evans

BLACKWOOD & NICHOLS
CATHODIC GROUND BED
DRILLERS REPORT

CP# SN-19 WELL# N.E.B.U. #19-A UNIT LETTER P S 20 T 30 R 7

DEPTH	STRATA	NOTES	DEPTH	STRATA	NOTES
0-100	Casing				
100-140	Sandstone	(Very Damp @ 140')			
140-150	Grey Shale				
150-180	Grey Sandstone	(Very Damp @ 180')			
180-325	Black & Red	Shale			

DRILLER [signature]

INSPECTOR Mark D. McFarland

#405/30-039-24491

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO
(Submit 3 Copies to OCD Aztec Office)

Operator: BLACKWOOD & NICHOLS CO. Location: Unit M, Sec. 21, Twp 30N, Rng 7W.

Name of Well/Wells or Pipeline Serviced NEBU 405, 4

Elevation 6720' Completion Date 7-11-93 Total Depth 385' Land Type* **Surface: F Mineral: SF-079060**

Casing, Sizes, Types & Depths 8-5/8" SCH 40 P.V.C. - 100', 7 7/8" OPEN HOLE.

If Casing is cemented, show amounts & types used 20 sks Portland Zia I-II

If Cement or Bentonite Plugs have been placed, show depths & amounts used N/A

Depths & thickness of water zones with description of water when possible:

Fresh, Clear, Salty, Sulphur, Etc. No water

Depths gas encountered:

Type & amount of coke breeze used: Asbury recarburized 108 sx

Depths anodes placed: 195' to 371'

Depths vent pipes placed: 385' to 4' above ground level

Vent pipe perforations: 125' to 385'

Remarks: Groundbed located 178' & North 90° W from NEBU 405

If any of the above data is unavailable, please indicate so. Copies of all logs, including Drillers Log, Water Analyses & Well Bore Schematics should be submitted when available. Unplugged abandoned wells are to be included.

*Land Type may be shown: F-Federal; I-Indian; S-State; P-Fee.
If Federal or Indian, add Lease Number.

Signed by: James K. Aebersold Title: Operations Engineer Date: 8/11/93

BLACKWOOD & NICHOLS
CATHODIC GROUND BED
DRILLERS REPORT

CP# SS-20 WELL# SS-21 S 21 T 30 R 07

DEPTH	STRATA	NOTES	DEPTH	STRATA	NOTES
10		sand stone			
20		↑			
30		↓			
40		↓			
50		Brown Shale			
60		↑			
70		↑			
80		↑			
90		↓			
100		sand stone			

DRILLER Jesse martinez INSPECTOR Jessie Evans

BLACKWOOD & NICHOLS
CATHODIC GROUND BED
DRILLERS REPORT

CP# SS-20 WELL# NEBU #405 + #4 S 21 T 30 R C

DEPTH	STRATA	NOTES	DEPTH	STRATA	NOTES
0-100	Casing				
100-130	Black Shale				
130-160	Grey Sandstone (Damp @ 160')				
160-180	Black Shale				
180-190	White & Brown Sandstone (Damp)				
190-390	Grey & Black Shale				

DRILLER _____

INSPECTOR _____

#6/ 30-039-07770 #477/ 30-039-24448 SS

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO
(Submit 3 Copies to OCD Aztec Office)

Operator: BLACKWOOD & NICHOLS CO. Location: Unit H, Sec. 29, Twp 30N, Rng 7W.

Name of Well/Wells or Pipeline Serviced NEBU 477, 6

Elevation 6340' Completion Date 7-12-93 Total Depth 392' Land Type* **Surface: F Mineral: SF-079060**

Casing, Sizes, Types & Depths 8-5/8" SCH 40 P.V.C. - 100', 7 7/8" OPEN HOLE.

If Casing is cemented, show amounts & types used 20 sks Portland Zia I-II

If Cement or Bentonite Plugs have been placed, show depths & amounts used N/A

Depths & thickness of water zones with description of water when possible:

Fresh, Clear, Salty, Sulphur, Etc. Not enough for sample, moisture at 140'

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DIST. 3

Depths gas encountered: N/A

Type & amount of coke breeze used: Asbury Recarburized - 112 sx

Depths anodes placed: 138' to 355'

Depths vent pipes placed: 395' to 4' above ground level

Vent pipe perforations: 95' to 395'

Remarks: Groundbed located 140' N 50° E of NEBU 477

If any of the above data is unavailable, please indicate so. Copies of all logs, including Drillers Log, Water Analyses & Well Bore Schematics should be submitted when available. Unplugged abandoned wells are to be included.

*Land Type may be shown: F-Federal; I-Indian; S-State; P-Fee.
If Federal or Indian, add Lease Number.

Signed by: Jana K. Aleng Title: Operations Engineer Date: 8/11/93

BLACKWOOD & NICHOLS
CATHODIC GROUND BED
DRILLERS REPORT

CP# SS18 WELL# NEB 6-29 S 29 T 30 N R 7W

DEPTH	STRATA	NOTES	DEPTH	STRATA	NOTES
0'					
10'					
20'					
30'					
40'					
50'					
60'					
70'					
80'					
90'					
100'					

RED AND BLUE SHALE

DRILLER jesse martinez INSPECTOR Joe Matyeck

BLACKWOOD & NICHOLS
CATHODIC GROUND BED
DRILLERS REPORT

CP# SS-18 WELL# NEBU #477 + #6 S 29 T 30 R 0

DEPTH	STRATA	NOTES	DEPTH	STRATA	NOTES
0-100	Casing				
100-135	Grey Sandstone (Damp @ 140)				
135-145	Grey Shale				
145-160	Grey Sandstone				
160-175	Grey Shale				
175-285	Grey Sandstone				
285-290	Grey Shale				
290-335	Grey Sandstone				
335-350	Grey Shale				
350-410	Grey Sandstone				

DRILLER [signature]

INSPECTOR Jesse D. Evans

1220

30-039-21903

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO
(Submit 3 copies to OCD Aztec Office)

Operator MERIDIAN OIL Location: Unit SE Sec. 30 Twp 30 Rng 7

Name of Well/Wells or Pipeline Serviced SAN JUAN 30-6 UNIT #9A

cps 1473w

Elevation 6289' Completion Date 8/7/80 Total Depth 540' Land Type* N/A

Casing, Sizes, Types & Depths 12' OF SURFACE CASING

If Casing is cemented, show amounts & types used N/A

If Cement or Bentonite Plugs have been placed, show depths & amounts used

N/A

Depths & thickness of water zones with description of water when possible:

Fresh, Clear, Salty, Sulphur, Etc. 180' SAMPLE TAKEN

Depths gas encountered: 540'

Type & amount of coke breeze used: 49 SACKS

Depths anodes placed: 395', 385', 375', 330', 320', 310', 300', 230', 220', 210'

Depths vent pipes placed: 540'

Vent pipe perforations: 380'

Remarks: gb #1 WATER WENT DOWN HOLE WHILE COKING.

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DIST. 3

If any of the above data is unavailable, please indicate so. Copies of all logs, including Drillers Log, Water Analyses & Well Bore Schematics should be submitted when available. Unplugged abandoned wells are to be included.

*Land Type may be shown: F-Federal; I-Indian; S-State; P-Fee.
If Federal or Indian, add Lease Number.

El Paso Natural Gas Company
Form 7-238 (Rev. 11-71)

WELL CASING
CATHODIC PROTECTION CONSTRUCTION REPORT
DAILY LOG

Drilling Log (Attach Hereto). ☐ 2"X60" Purion Completion Date 8/7/80

Well Name	Location	CPS No.
S.J. 30-6 #9A	SE 30-30-7	1473 W

Type & Size Bit Used	Work Order No.
6 3/4"	57570-21

Anode Hole Depth	Total Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
540' T.D. 540'		49 SACKS		

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
Anode Depth	395'	385'	375'	330'	320'	310'	300'	230'	220'	210'
Anode Output (Amps)	2.3	2.5	2.1	2.4	2.6	2.8	2.1	3.2	3.4	3.5
Anode Depth	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20
Anode Output (Amps)										

Total Circuit Resistance			No. 8 C.P. Cable Used	No. 2 C.P. Cable Used
Volts 10.8	Amps 12.0	Ohms .9		

Remarks: STATIC 600' E. = .76 V INSULATED UNION checked OK Driller said water at 180'. Approx. 2 gal./min. Drilled to 300'. water standing in hole next A.M. at 180'. Took water sample. Set 12' of surface casing (1 Hr. Rig. Time) Drilled to 540'. Hit gas, came out, & logged hole to 540'. INSTALLED 540' of 1" P.V.C. vent pipe perforated 380'. WATER went down hole while coreing.

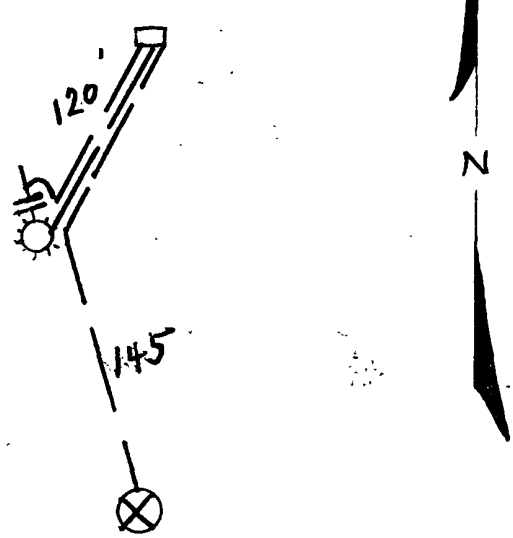
All Construction Completed

(Signature)

8 Hr. Reg.
5 Hr. O.T.

Ditch + 1 cable = 265' ✓
extra cable = 270' ✓
20' meter loop pole ✓
40V 16A Rect. ✓
Hole Depth +40' ✓
1 Hr. Rig Time for setting surface casing ✓

GROUND BED LAYOUT SKETCH



DISTRIBUTION:
WHITE – Division Corrosion Office
YELLOW – Area Corrosion Office
PINK – Originator File

6289

-6 9A Three C Drilling 2 CPS 1473W DAILY DRILLING REPORT

LEASE SE 30-30-7 WELL NO. CONTRACTOR RIG NO. REPORT NO. 57570-21 DATE August 7 1980

MORNING

Driller Kevin Burge Total Men In Crew 3

FROM	TO	FORMATION	WT-BIT	R.P.M.
0	180	sandstone shale bentonite water sand		
180	200	sandstone shale		
200	300	sandstone shale		
300	330	shale		

BIT NO. NO. DC SIZE LENG.

SER. NO. NO. DC SIZE LENG.

SIZE 6¾ STANDS

TYPE SINGLES

MAKE DOWN ON KELLY

TOTAL DEPTH

MUD RECORD Time	Wt.	Vis.	MUD, ADDITIVES USED AND RECEIVED

FROM	TO	TIME BREAKDOWN
330	360	sandstone
360	400	shale
400	540	sandstone shale

REMARKS – Water at 180'. Approx. 2GPM logged 540'. Hit gas at 540'

DAYLIGHT

Driller Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.

BIT NO. NO. DC SIZE LENG.

SERIAL NO. NO. DC SIZE LENG.

SIZE STANDS

TYPE SINGLES

MAKE DOWN ON KELLY

TOTAL DEPTH

MUD RECORD Time	Wt.	Vis.	MUD, ADDITIVES USED AND RECEIVED

FROM	TO	TIME BREAKDOWN

REMARKS –

EVENING

Driller Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.

BIT NO. NO. DC SIZE LENG.

SERIAL NO. NO. DC SIZE LENG.

SIZE STANDS

TYPE SINGLES

MAKE DOWN ON KELLY

TOTAL DEPTH

MUD RECORD Time	Wt.	Vis.	MUD, ADDITIVES USED AND RECEIVED

FROM	TO	TIME BREAKDOWN

REMARKS –

SIGNED: Toolpusher Kevin Burge Company Supervisor

El Paso Natural Gas Company
ENGINEERING CALCULATION

Sheet ____ of ____
Date
By:
File:

CPS #1473 W

S.J. 30-6 #9A | SE 30-30-7 | W.O. 57570-21

MW		gals/mol
16 04	C_1	6 4
30.07	C_2	10 12
44 10	C_3	10 42
58.12	iC_4	12 38
58.12	nC_4	11 93
72.15	iC_5	13 85
72 15	nC_5	13 71
86.18	iC_6	15 50
86.18	C_6	15 57
100.21	iC_7	17 2
100.21	C_7	17 46
114 23	C_8	19.39
28 05	$C_2^=$	9 64
42 08	$C_3^=$	9 67

MISC. MW		gals/mol
32.00	O_2	3 37
28.01	CO	4 19
44.01	CO_2	6 38
64.06	SO_2	5 50
34 08	H_2S	5 17
28 01	N_2	4 16
2.02	H_2	3.38

170 —	380 — 1.7	Driller said water at 180'.
	1.9 — ②	Approx. 2gal./min. Drilled
80 —	90 — 1.7	To 300, water standing
	1.4 — ①	in hole next A.M. at 180'
90 — .5	400 — 1.2	Took water sample. Set 12'
.3	.6	of surface casing. (No Rig
200 — .4	10 — .4	Time) Drilled To 540'. Hit
.5	.5	gas Logged Hole To 540'.
10 — 1.9 — ⑩	20 — .6	Installed 540' of 1" P.V.C.
2.1	.6	vent pipe, perforated 380',
20 — 1.5 — ⑨	30 — .6	water went down hole
1.9	.9	while coleing.
30 — 1.3 — ⑧	40 — 1.5	
1	1.0	10.8 V. 12.0 A. = .9 Ω
40 — .5	50 — .8	
.4	.7	8/17/80
50 — .5	60 — .6	JL
.5	.6	
60 — .5	70 — .8	
.5	.6	
70 — .5	80 — .7	
.5	.7	
80 — .6	90 — .6	
.6	.7	
90 — .7	500 — .7	1 — 395' — 1.6 — 2.3
.9	.6	2 — 385' — 1.6 — 2.5
300 — 1.5 — ⑦	10 — .6	3 — 375' — 1.4 — 2.1
1.7	.7	4 — 330' — 1.4 — 2.4
10 — 1.9 — ⑥	20 — .7	5 — 320' — 1.6 — 2.6
1.6	1.4	6 — 310' — 1.8 — 2.8
20 — 1.6 — ⑤	30 — 1.3	7 — 300' — 1.5 — 2.1
1.4	1.4	8 — 230' — 1.8 — 3.2
30 — 1.4 — ④	40 — T.D	9 — 220' — 1.9 — 3.4
.9		10 — 210' — 1.9 — 3.5
40 — .5		
.5		
50 — .6		
.6		
60 — .6		
.6		
70 — .6		
1.3 — ③		

EL PASO NATURAL GAS COMPANY
SAN JUAN DIVISION
FARMINGTON, NEW MEXICO
PRODUCTION DEPARTMENT WATER ANALYSIS

Analysis No. 1-10033 Date 11-12-80

Operator El Paso Natural Gas Well Name San Juan 30-6 #9A

Location SE 30-30-7 County Rio Arriba State New Mexico

Field Blanco Formation

Sampled From CPS 1473 W @ 180 ft.

Date Sampled 8-7-80 By

Tbg. Press. Csg. Surface Csg. Press.

	ppm	epm		ppm	epm
Sodium	138	6.0	Chloride	24	0.7
Calcium	136	6.8	Bicarbonate	190	3.1
Magnesium	12	1.0	Sulfate	480	10.0
Iron	No test		Carbonate	0	0
H_2S	No test		Hydroxide	0	0

Total Solids Dissolved 1150

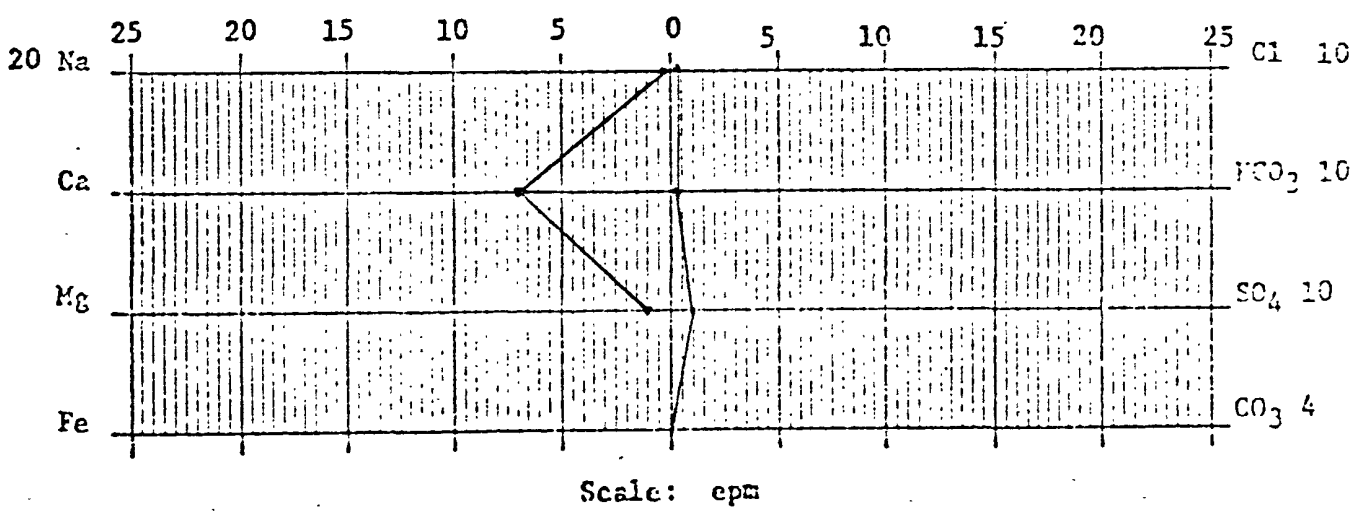
pH 7.4

Sp. Gr. .9978 At 60°F

Resistivity 800 ohm-cm at 77 °F

cc: C.B. O'Nan
R.A. Ullrich
E.R. Paulek
J.W. McCarthy
A.M. Smith
W.B. Shropshire
D.C. Adams
File

Joe Barnett
Chemist



15- 30-039-07757

497 - 30-039-24960

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO
(Submit 3 copies to OCD Aztec Office)

Operator MERIDIAN OIL Location: Unit SW Sec. 29 Twp 30 Rng 7

Name of Well/Wells or Pipeline Serviced SAN JUAN 30-6 UNIT #15, #497

cps 262w

Elevation 6279 Completion Date 8/19/74 Total Depth 660' Land Type* N/A

Casing, Sizes, Types & Depths N/A

If Casing is cemented, show amounts & types used N/A

If Cement or Bentonite Plugs have been placed, show depths & amounts used

N/A

Depths & thickness of water zones with description of water when possible:

Fresh, Clear, Salty, Sulphur, Etc. 160' 390'

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Depths gas encountered: N/A

Type & amount of coke breeze used: N/A

Depths anodes placed: 565', 555', 545', 525', 470', 460', 435', 425', 415', 225'

Depths vent pipes placed: N/A

Vent pipe perforations: 405'

Remarks: gb #2

If any of the above data is unavailable, please indicate so. Copies of all logs, including Drillers Log, Water Analyses & Well Bore Schematics should be submitted when available. Unplugged abandoned wells are to be included.

*Land Type may be shown: F-Federal; I-Indian; S-State; P-Fee.
If Federal or Indian, add Lease Number.

El Paso Natural Gas Company
Form 7-238 (Rev. 1-69)

WELL CASING
CATHODIC PROTECTION CONSTRUCTION REPORT
DAILY LOG

LOGGED

Drilling Log (Attach Hereto). ☐

Completion Date 8-19-74

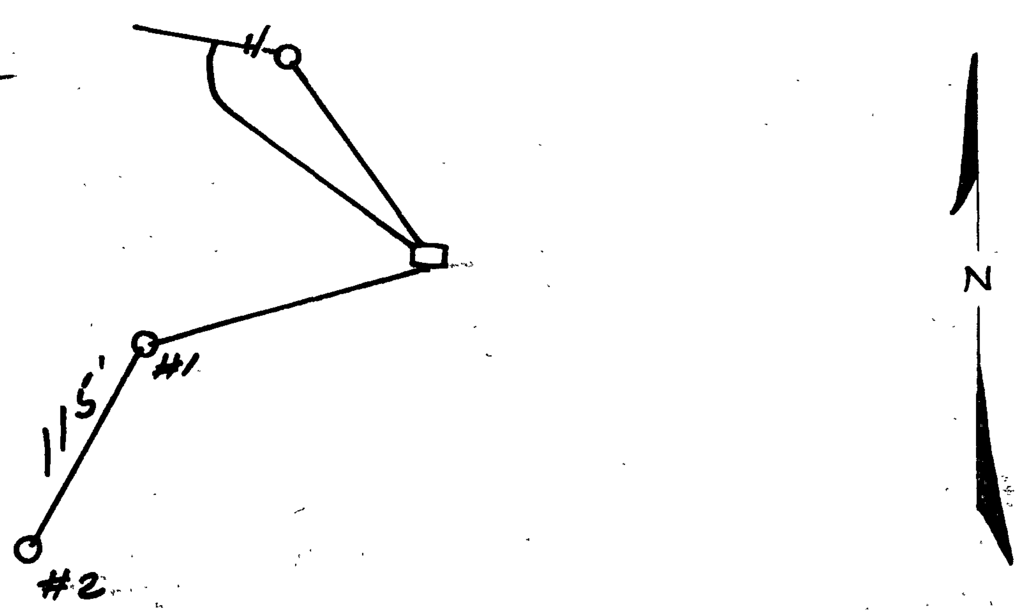
Well Name SJ 30-6 # 15				Location SW29-30-7				CPS No. 262 W	
Type & Size Bit Used 6¾								Work Order No. 40025	
Anode Hole Depth 660		Total Drilling Rig Time		Total Lbs. Coke Used		Lost Circulation Mat'l Used		No. Sacks Mud Used	
Anode Depth									
# 1 565	# 2 555	# 3 545	# 4 525	# 5 470	# 6 460	# 7 435	# 8 425	# 9 415	# 10 225
Anode Output (Amps)									
# 1 2.3	# 2 2.7	# 3 2.0	# 4 1.4	# 5 2.1	# 6 1.6	# 7 1.4	# 8 2.1	# 9 2.0	# 10 3.6
Anode Depth									
# 11	# 12	# 13	# 14	# 15	# 16	# 17	# 18	# 19	# 20
Anode Output (Amps)									
# 11	# 12	# 13	# 14	# 15	# 16	# 17	# 18	# 19	# 20
Total Circuit Resistance Volts 11.5		Amps 10.8		Ohms 1.06	No. 8 C.P. Cable Used 120'			No. 2 C.P. Cable Used	

Remarks: Driller Said Water at 160 & 390- Start Log at 215'
Without adding water to hole Approx 1 hr. after Stop Dril.
Vent Perforated 405'
Pump Coke to 70' of Surface- Complete By Slurry

$ 3,409.00
48.00 Cable
$ 3,457.00
675.00 Extra Depth
$ 4,132.00
165.28 Tax
$ 4,297.28 Total

All Construction Completed
Darrels
(Signature)

GROUND BED LAYOUT SKETCH



STORM WATER WELL DRILLING INC.

DIAMOND CORE DRILLING
DIAMOND DRILLING EQUIPMENT
GROUTING
FOUNDATION TESTING
MINING
QUARRYING
SHAFT SINKING
WATER WELL DRILLING

CONTRACTORS
14991 W. 44TH AVENUE
GOLDEN, COLORADO 80401
PHONE (303) 278-9505

GENERAL OFFICE
14991 W. 44TH AVENUE
BAILEY OFFICE
CALL 1-838-4821

Drill GD Date 8-19-74

Owner C.P.S 262 W

Location
City FARMINGTON State N. M. County

From	To	Formation	Color	Hardness
0	10	SURFACE	BR	~~Hard~~ Soft
10	60	SANDSTONE	BR.	Hard
60	80	SANDY SHALE	BK.	Med
80	220	SANDSTONE	BL.	Hard
220	260	SANDY SHALE	BL	Med
260	400	SANDSTONE	BL.	Hard
400	660	SANDSTONE & STREAKS of shale	BL.	Hard

Injection at 80
Water at 160 & 390
increasing to T.D.

Total Hours
Equipment Down Time
Hours Drilling
Driller Art Gladwell
Helper
Helper

C.P.S. Time
S.W.W.D.I. Time
Total Footage
Approval of
C.P.S. Engineer

115' JB.

262W – X = 7.8

180			360	.6	6	540	.8	
				.6	.7		.9	–
90			70	5	.6	50	1.4	
				6	.6		1.6	–
200			80	6	.6	60	1.4	
				6	.6		1.2	–
10			90	.7	.7	70	.6	
	3			.7	.6		.7	
20	9		400	.7	.7	80	7	
	9 –			.7	.7		7	
30	.8		10	.8	.8	90	7	
	7			1.1	1.1		7	
40	7 –		20	1.2	1.3	600	7	
	6			1.3	1.1		7	
50	2		30	.7	6	10	.8	
	5			6	.8		7	
60	6		40		7	20	7	
	7		TD 42		6		7	
70	5		50		7	30	1.1	
	3				.7		1.3	
80	.4	.4	80		.9	40	.8	
	.4				1.4		.6	
90	.4		70		1.4	50	4	
	4				.7		.3	
300	4		80		6	60	3	TD
	4				.7			
10	3		90		7			
	3				7			
20	2		500		7			
	2				7			
30	5		10		7			
	.5				7			
40	5		20		7			
	5				.8			
50	5		30		7			
	6				7			

Driller Said wtr at 180 – & 390
Start Log at 2:15 without adding wtr to hole approx 1 Hr.

Vent Perf. 405

1	565	1.2	1.6	2.3
2	555	1.6	1.8	2.7
3	545	.8	1.2	2.0
4	525	.8	.9	1.4
5	470	1.4	1.6	2.1
6	460	.9	1.0	1.6
7	435	.8	.8	1.4
8	425	1.1	1.4	2.1
9	415	1.1	1.1	2.0
10	225	.9	1.8	3.6

115 V 10.8 A = 1.06 Ω

108
700

MW		gals/mol
16	C_1	6.4
30	C_2	9.56
44	C_3	10.42
58	IC_4	12.38
"	NC_4	11.93
72	IC_5	13.85
"	NC_5	13.71
86	IC_6	15.50
"	C_6	15.57
100	IC_7	17.2
"	C_7	17.46
114	C_8	19.38
28	$C_2^=$	9.64
42	$C_3^=$	9.67

MISC.

MW		gals/mol
44	CO_2	6.38
34	H_2S	5.17
28	N_2	4.16
2	H_2	3.38

120

30-039-21902

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO
(Submit 3 copies to OCD Aztec Office)

Operator MERIDIAN OIL Location: Unit SE Sec. 29 Twp 30 Rng 7

Name of Well/Wells or Pipeline Serviced SAN JUAN 30-6 UNIT #15A

cps 1474w

Elevation 6311' Completion Date 8/6/80 Total Depth 560' Land Type* N/A

Casing, Sizes, Types & Depths N/A

If Casing is cemented, show amounts & types used N/A

If Cement or Bentonite Plugs have been placed, show depths & amounts used

N/A

Depths & thickness of water zones with description of water when possible:

Fresh, Clear, Salty, Sulphur, Etc. 120' SAMPLE TAKEN

Depths gas encountered: N/A

Type & amount of coke breeze used 56 SACKS

Depths anodes placed: 470', 390', 383', 375', 285', 277', 269', 261', 253', 245'

Depths vent pipes placed: 530'

Vent pipe perforations: 410'

Remarks: gb #1

RECEIVED
MAY 31 1991
OIL CON. DIV.
DIST. 3

If any of the above data is unavailable, please indicate so. Copies of all logs, including Drillers Log, Water Analyses & Well Bore Schematics should be submitted when available. Unplugged abandoned wells are to be included.

*Land Type may be shown: F-Federal; I-Indian; S-State; P-Fee.
If Federal or Indian, add Lease Number.

El Paso Natural Gas Company
Form 7-238 (Rev. 11-71)

WELL CASING
CATHODIC PROTECTION CONSTRUCTION REPORT
DAILY LOG

Drilling Log (Attach Hereto). ☐ 2"x60" DUPLEX Completion Date 8/6/80

Well Name	Location	CPS No.
S.J. 30-6 #15A	SE 29-30-7	1474 ✓

Type & Size Bit Used	Work Order No.
6 3/4"	57571-21

Anode Hole Depth	Total Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
560' T.D. 530'		56 SACKS		

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
Anode Depth	470'	390'	383'	375'	285'	277'	269'	261'	253'	245'
Anode Output (Amps)	1.8	2.7	2.6	2.3	2.0	2.4	2.6	2.9	3.3	3.1
Anode Depth	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20
Anode Output (Amps)	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20

Total Circuit Resistance			No. 8 C.P. Cable Used	No. 2 C.P. Cable Used
Volts 11.7	Amps 11.4	Ohms 1.03		

Remarks: STATIC 600' W = .80V INSULATED UNION checked OK
Driller said water AT 120', Approx. 2gal./min. Took water sample
Drilled To 560', Logged Hole next A.M. To 530'. INSTALLED 530'
of 1" P.V.C. VENT pipe, PerforATed 410'.

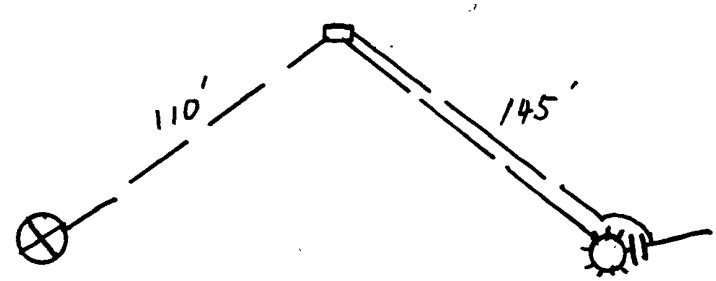
DITCH & 1 CABLE = 255' ✓
EXTRA CABLE = 175' ✓
STUB POLE ✓
40V 16A RECT. ✓
HOLE DEPTH + 30' ✓

All Construction Completed

J E Latta
(Signature)

14 Nr. Reg.
2 Nr. O.T.

GROUND BED LAYOUT SKETCH



DISTRIBUTION:
WHITE – Division Corrosion Office
YELLOW – Area Corrosion Office
PINK – Originator File

631

EL PASO NATURAL GAS COMPANY

DRILLING DEPARTMENT

San Juan 30-6 | # 15 A | Three C Drilling | 2 | CPS 1474 | DAILY DRILLING REPORT

LEASE SE 29-30-7 | WELL NO. | CONTRACTOR | RIG NO. | REPORT NO. 5571-21 | DATE August 6 | 1980

MORNING

Driller Kevin Burge | Total Men In Crew 3

FROM	TO	FORMATION	WT-BIT	R.P.M.
0	120	shale sandstone bentonite clay water sand		
120	240	sandstone shale		
240	300	shale		
300	370	sandstone		

BIT NO. | NO. DC ____ SIZE ____ LENG. ____

SERIAL NO. | NO. DC ____ SIZE ____ LENG. ____

SIZE 6 3/4 | STANDS

TYPE | SINGLES

MAKE | DOWN ON KELLY

TOTAL DEPTH

MUD RECORD

Time	Wt.	Vis.	MUD, ADDITIVES USED AND RECEIVED

FROM	TO	TIME BREAKDOWN
370	400	shale
400	450	sandstone
450	470	shale
470	500	sandstone
500	560	shale

REMARKS – Water at 120, 2GPM. logged 530'

DAYLIGHT

Driller | Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.

BIT NO. | NO. DC ____ SIZE ____ LENG. ____

SERIAL NO. | NO. DC ____ SIZE ____ LENG. ____

SIZE | STANDS

TYPE | SINGLES

MAKE | DOWN ON KELLY

TOTAL DEPTH

MUD RECORD

Time	Wt.	Vis.	MUD, ADDITIVES USED AND RECEIVED

FROM	TO	TIME BREAKDOWN

REMARKS –

EVENING

Driller | Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.

BIT NO. | NO. DC ____ SIZE ____ LENG. ____

SERIAL NO. | NO. DC ____ SIZE ____ LENG. ____

SIZE | STANDS

TYPE | SINGLES

MAKE | DOWN ON KELLY

TOTAL DEPTH

MUD RECORD

Time	Wt.	Vis.	MUD, ADDITIVES USED AND RECEIVED

FROM	TO	TIME BREAKDOWN

REMARKS –

SIGNED: Toolpusher Kevin Burge | Company Supervisor

EL PASO NATURAL GAS COMPANY
SAN JUAN DIVISION
FARMINGTON, NEW MEXICO
PRODUCTION DEPARTMENT WATER ANALYSIS

Analysis No. 1-10032 Date 11-12-80

Operator El Paso Natural Gas Well Name San Juan 30-6 #15A

Location SE 29-30-7 County Rio Arriba State New Mexico

Field Blanco Formation

Sampled From CPS 1474 W @120 ft.

Date Sampled 8-6-80 By

Tbg. Press. Csg. Surface Csg. Press.

	ppm	epm		ppm	epm
Sodium	947	41.2	Chloride	52	1.5
Calcium	104	5.2	Bicarbonate	346	5.7
Magnesium	9	0.7	Sulfate	1920	39.9
Iron	No test		Carbonate	0	0
H_2S	No test		Hydroxide	0	0

Total Solids Dissolved 3154

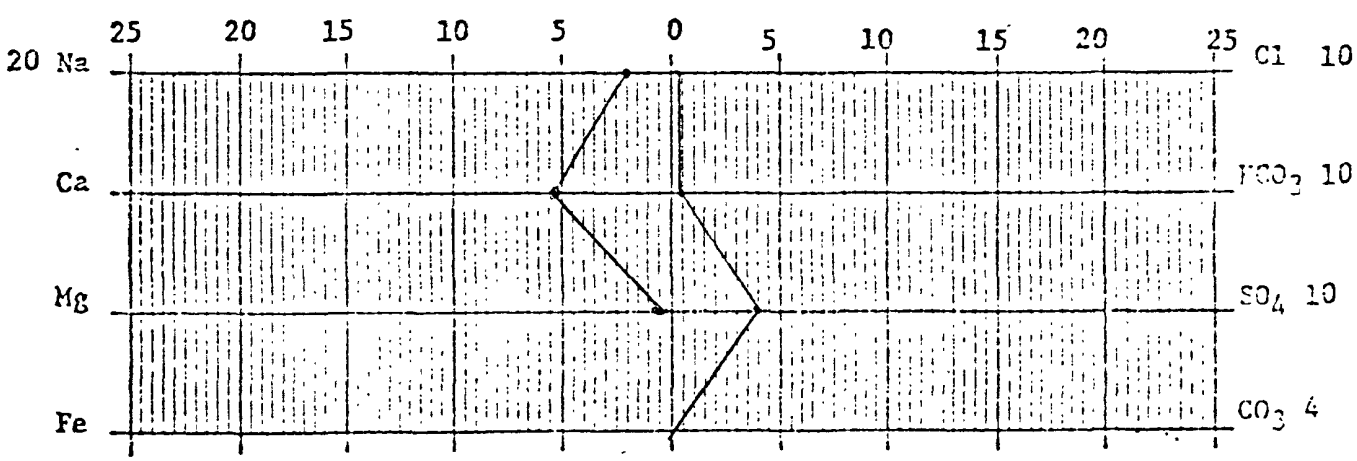
pH 7.4

Sp. Gr. .9987 At 60°F

Resistivity 227 ohm-cm at 77°F

cc: C.B. O'Nan
R.A. Ullrich
E.R. Paulek
J.W. McCarthy
A.M. Smith
W.B. Shropshire
D.C. Adams
File

Joe Barnett
Chemist



Scale: epm

El Paso Natural Gas Company
ENGINEERING CALCULATION

Sheet ____ of ____
Date
By
File

CPS # 1474 W

S.J. 30-6 # 15 A | SE 29-30-7 | W.O. 57571-21

MW		gals/mol
16.04	C_1	6.4
30.07	C_2	10.12
44.10	C_3	10.42
58.12	iC_4	12.38
58.12	nC_4	11.93
72.15	iC_5	13.85
72.15	nC_5	13.71
86.18	iC_6	15.50
86.18	C_6	15.57
100.21	iC_7	17.2
100.21	C_7	17.46
114.23	C_8	19.39
28.05	$C_2^=$	9.64
42.08	$C_3^=$	9.67

MISC MW		gals/mol
32.00	O_2	3.37
28.01	CO	4.19
44.01	CO_2	6.38
64.06	SO_2	5.50
34.08	H_2S	5.17
28.01	N_2	4.16
2.02	H_2	3.38

120 – 1.0
.8
30 – .9
1.3
40 – .8
.5
50 – .4
.8
60 – .8
.5
70 – .3
.3
80 – .2
.2
90 – .4
1.13
200 – .9
.8
10 – .7
.6
20 – .3
.2
30 – .5
.7
40 – .4
1.3 — (10)
50 – 1.7
2.0 — (9)
60 – 2.1 — (8)
2.3
70 – 2.0 — (7)
1.8
80 – 1.6 — (6)
1.5 — (5)
90 – .7
.6
300 – .4
.4

310 – .5
.4
20 – .3
.6
30 – .5
.3
40 – .8
.8
50 – .8
.7
60 – .7
.7
70 – .7
1.5 — (4)
80 – 1.2 — (3)
1.6
90 – 1.4 — (2)
.9
400 – .9
.8
10 – .8
.7
20 – .7
.8
30 – .9
.8
40 – .8
.8
50 – .8
1.0
60 – 1.0
1.1
70 – 1.4 — (1)
.9
80 – .6
.7
90 – .7
.7
500 – .8
.9

510 – .9
1.4
20 – 1.7
.8
30 –
40 –
50 –
60 –

Driller said water at 120', Approx. 2 gal./min. Took water sample. Drilled to 560, Logged Hole Next A.M. To 530. Installed 530' of 1" P.V.C. vent pipe perforated 410'.

11.7 V. 11.4 A. = 1.03 Ω
8/6/80
JR

1 – 470 – 1.3 – 1.8
2 – 390 – 1.6 – 2.7
3 – 383 – 1.9 – 2.6
4 – 375 – 1.5 – 2.3
5 – 285 – 1.3 – 2.0
6 – 277 – 1.4 – 2.4
7 – 269 – 1.8 – 2.6
8 – 261 – 2.1 – 2.9
9 – 253 – 1.1 – 3.3
10 – 245 – 1.8 – 3.10

30-039-07729

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO
(Submit 3 copies to OCD Aztec Office)

Operator MERIDIAN OIL Location: Unit NE Sec. 32 Twp 30 Rng 7

Name of Well/Wells or Pipeline Serviced SAN JUAN 30-6 UNIT #47

cps 279w

Elevation 6211' Completion Date 3/22/63 Total Depth 100' Land Type* N/A

Casing, Sizes, Types & Depths N/A

If Casing is cemented, show amounts & types used N/A

If Cement or Bentonite Plugs have been placed, show depths & amounts used

N/A

Depths & thickness of water zones with description of water when possible:

Fresh, Clear, Salty, Sulphur, Etc. N/A

Depths gas encountered: N/A

Type & amount of coke breeze used: 850 lbs.

Depths anodes placed: 90', 84', 55', 49', 43', 31'

Depths vent pipes placed: N/A

Vent pipe perforations: N/A

Remarks: gb #1

RECEIVED
MAY 31 1991
OIL CON. DIV
DIST. 3

If any of the above data is unavailable, please indicate so. Copies of all logs, including Drillers Log, Water Analyses & Well Bore Schematics should be submitted when available. Unplugged abandoned wells are to be included.

*Land Type may be shown: F-Federal; I-Indian; S-State; P-Fee.
If Federal or Indian, add Lease Number.

WELL CASING
CATHODIC PROTECTION CONSTRUCTION REPORT
DAILY LOG

S.J. 30-6 #47 ~~Atlantic #1~~ DATE 3-22-63

WELL NAME ~~Southern Union State #1~~ CPS NO. 279W

LOCATION 32-30N-7W

WORK ORDER NUMBER 184-40542-50-02

ANODE HOLE DEPTH 100'

TOTAL DRILLING RIG TIME 3 Hrs

DRILLING TIME FOR RECTIFIER POLE HOLE 0

TYPE AND SIZE BIT USED

NUMBER SACKS MUD USED 2

NUMBER SACKS LOST CIRCULATION MAT'L USED 0

ANODE DEPTHS #1 90', #2 84', #3 55', #4 49' 543 631'

TOTAL LBS. COKE USED 850 165

ANODE OUTPUTS 12 VOLTS, #1 2.3, #2 2.4, #3 2.4, #4 2.8 5.2.6 62.

TOTAL CIRCUIT RESISTANCE: VOLTS 11.7 AMPERES 6.8 OHMS 1.72

NUMBER FEET SURFACE CABLE ~~CONDUIT~~ 263'

DRILLING LOG (ATTACH HERETO).

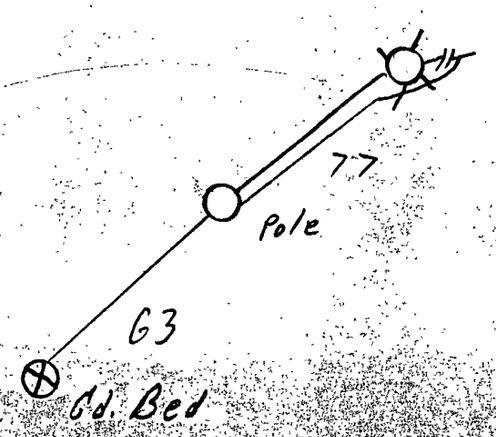
FORMATION LOG (ATTACH HERETO).

REMARKS: Static C/S = .62 R 600 NW

ALL CONSTRUCTION COMPLETED

E Pauli
SIGNATURE

GROUND BED LAYOUT SKETCH



ORIGINAL & 1 COPY
ALL REPORTS

104'

Form 22-2 (Rev. 1-61)

EL PASO NATURAL GAS COMPANY
DRILLING DEPARTMENT

DAILY DRILLING REPORT

LEASE ~~[struck-through text]~~ S.J. 30-6 Aztec ST #1 WELL NO. 1 CONTRACTOR L.E. Wilson RIG NO. D-2 REPORT NO. DATE 3-22 1968

MORNING

Driller: Total Men In Crew:

FROM	TO	FORMATION	WT-BIT	R.P.M.
0	35	SS.	3491	
35	100	Sh & SS. stringers	"	

BIT NO.: SERIAL NO. 3491 SIZE 6 3/4 TYPE Rock MAKE W.M.

NO. DC SIZE LENG. / NO. DC SIZE LENG. / STANDS / SINGLES / DOWN ON KELLY / TOTAL DEPTH 100'

MUD RECORD (Time / Wt. / Vis.) — MUD, ADDITIVES USED AND RECEIVED: 2 sacks Mud

TIME BREAKDOWN (FROM / TO):

REMARKS: 1 Load water

DAYLIGHT

Driller: Total Men In Crew:

FROM	TO	FORMATION	WT-BIT	R.P.M.

BIT NO. SERIAL NO. SIZE TYPE MAKE

NO. DC SIZE LENG. / NO. DC SIZE LENG. / STANDS / SINGLES / DOWN ON KELLY / TOTAL DEPTH

MUD RECORD (Time / Wt. / Vis.) — MUD, ADDITIVES USED AND RECEIVED:

TIME BREAKDOWN (FROM / TO): Rig Time 3 hrs.

REMARKS:

EVENING

Driller: Total Men In Crew:

FROM	TO	FORMATION	WT-BIT	R.P.M.

BIT NO. SERIAL NO. SIZE TYPE MAKE

NO. DC SIZE LENG. / NO. DC SIZE LENG. / STANDS / SINGLES / DOWN ON KELLY / TOTAL DEPTH

MUD RECORD (Time / Wt. / Vis.) — MUD, ADDITIVES USED AND RECEIVED:

TIME BREAKDOWN (FROM / TO):

REMARKS:

SIGNED: Toolpusher ______ Company Supervisor ERP

30-039-07729

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO
(Submit 3 copies to OCD Aztec Office)

Operator MERIDIAN OIL Location: Unit NE Sec. 32 Twp 30 Rng 7

Name of Well/Wells or Pipeline Serviced SAN JUAN 30-6 UNIT #47

cps 279w

Elevation 6211' Completion Date 8/4/70 Total Depth 540' Land Type* N/A

Casing, Sizes, Types & Depths N/A

RECEIVED
MAY 31 1991
OIL CON. DIV
DIST. 3

If Casing is cemented, show amounts & types used N/A

If Cement or Bentonite Plugs have been placed, show depths & amounts used

N/A

Depths & thickness of water zones with description of water when possible:

Fresh, Clear, Salty, Sulphur, Etc. 80'

Depths gas encountered: N/A HOLE MAKING SMALL AMOUNT OF GAS.

Type & amount of coke breeze used: 96 SACKS

Depths anodes placed: 510', 495', 485', 475', 465', 310', 300', 190', 165', 90'

Depths vent pipes placed: N/A

Vent pipe perforations: 450'

Remarks: gb #2 ANODES #4 & #5 + #6 & #7 ARE DUAL. ALL OTHERS SINGLE

HOLE MAKING SMALL AMOUNT OF GAS

If any of the above data is unavailable, please indicate so. Copies of all logs, including Drillers Log, Water Analyses & Well Bore Schematics should be submitted when available. Unplugged abandoned wells are to be included.

*Land Type may be shown: F-Federal; I-Indian; S-State; P-Fee.
If Federal or Indian, add Lease Number.

El Paso Nat · al Gas Company
Form 7-238 (Rev. 1-69)

WELL CASING
CATHODIC PROTECTION CONSTRUCTION REPORT
DAILY LOG

GND BED No. 2

Drilling Log (Attach Hereto). ☐

Contract By GPS.

Completion Date 8-4-70

Well Name	Location	CPS No.
SJ. 30-6 # 47	NE 32-30-7	279 W

Type & Size Bit Used	Work Order No.
6 3/4"	184-70084-50-2

Anode Hole Depth	Total Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
540'				

	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10
Anode Depth	510	495	485	475	465	310	300	190	165	90
Anode Output (Amps)	1.8	2.0	3.0	3.2	3.2	3.4	3.4	2.2	2.5	2.4

	# 11	# 12	# 13	# 14	# 15	# 16	# 17	# 18	# 19	# 20
Anode Depth										
Anode Output (Amps)										

Total Circuit Resistance			No. 8 C.P. Cable Used	No. 2 C.P. Cable Used
Volts 11.5	Amps 13.2	Ohms 0.87		

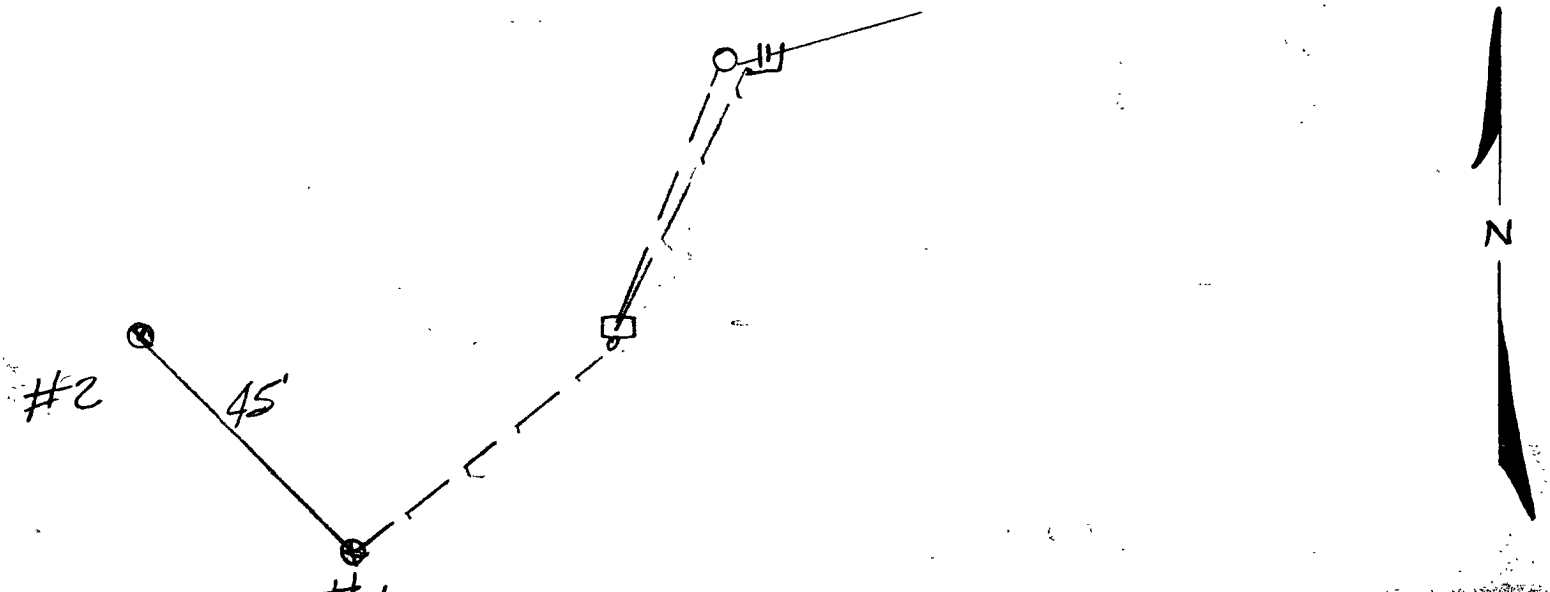
Remarks: Driller Said Blew water to Surface from 80'
Vent Hose Perforated 450' -
Anodes 4&5 - 6&7 are Dual - all others Single
Pump. 87 Coke - Dump " Total
Note — Hole making Small amount of Gas -

Pay 535'
No Extra Anodes

All Construction Completed

Darrels
(Signature)

GROUND BED LAYOUT SKETCH



EL PASO NATURAL GAS COMPANY

ENGINEERING DEPARTMENT

Date: _____

By: _____

Water at 80' - Good Return

279W - 8-3-70

Hole Making Gas

80	1.14		60	1.15		40	1.10				
	1.8			1.22			1.18				
90	2.2		70	1.17		50	1.25				
	.63			1.06		–	1.50				
100	.50		80	1.00		60	1.47				
	.58			1.02			1.97				
10	.83		90	1.10		70	1.85				
	.80			1.65 ⊙			1.90				
20	.85		300	1.90 *		80	2.5				
	.97			1.87 ⊙			2.3				
30	1.8		10	1.95 *		90	2.0				
	.70			1.63			1.75				
40	.92		20	1.26		500	1.34				
	1.05			.90			1.56				
50	1.19		30	.95		10	1.80				
	1.10			.98			1.40				
60	1.95		40	.96		20	1.43				
	2.00			.97		24	✓ Bot 40 m				
70	1.34		50	.98		30				8 7	
	1.15			1.01			13.2	11.5			
80	1.18		60	1.12		40		10	8		
	1.25			1.15			1 – 510	1.30	1.8		
90	1.90		70	1.15			2 – 495	1.55 – 2.0			
	1.50			1.15			3 – 485	2.2 – 3.0			
200	1.30		80	1.17			4 – 475	2.4 – 3.2			
	1.30			1.20			5 – 465				
10	1.20		90	1.40			6 310	2.5 – 3.4			
	1.10			1.21			7 300				
20	1.15		400	1.22			8 190	1.72 – 2.2			
	1.10			1.14			9 165	1.88 – 2.5			
30	.83		10	1.11			10 90	1.80 – 2.4			
	.85			1.15							
40	.94		20	1.11							
	1.00			1.10							
50	1.02		30	1.05							
	1.05			1.05							

MW		gals/mol
16	C_1	6.4
30	C_2	9.56
44	C_3	10.42
58	IC_4	12.38
"	NC_4	11.93
72	IC_5	13.85
"	NC_5	13.71
86	IC_6	15.50
"	C_6	15.57
100	IC_7	17.2
"	C_7	17.46
114	C_8	19.38
28	$C_2^=$	9.64
42	$C_3^=$	9.67

MISC.		
MW		gals/mol
44	CO_2	6.38
34	H_2S	5.17
28	N_2	4.16
2	H_2	3.38

3828

30-039-07729

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS NORTHWESTERN NEW MEXICO

Operator Meridian Oil Co. Location: Unit H Sec. 32 Twp 30 Rng 07

Name of Well/Wells or Pipeline Serviced

SAN JUAN 30-6 UNIT #47

Elevation 6211 Completion Date 1-6-93 Total Depth 520' Land Type S

Casing Strings, Sizes, Types & Depths 11/6 SET 99' OF 8" PVC CASING.

NO WATER, GAS, OR BOULDERS WERE ENCOUNTERED DURING CASING

If Casing Strings are cemented, show amounts & types used CEMENTED

WITH 21 SACKS

If Cement or Bentonite Plugs have been placed, show depths & amounts used

CORE AT 110', MIXED 10 BAGS CEMENT, SET 20' CEMENT PLUG.

Depths & thickness of water zones with description of water: Fresh, Clear,

Salty, Sulphur, Etc. 230'

RECEIVED
JAN 31 1994
OIL CON. DIV.

Depths gas encountered: 460'

Ground bed depth with type & amount of coke breeze used: 520'

77 SACKS OF (100 lb) VARCO TYPE 56 COKE BREEZE.

Depths anodes placed: 495', 487', 477', 467', 455', 445', 310', 302', 293', 284', 256', 190'

Depths vent pipes placed: 520'

Vent pipe perforations: BOTTOM 340'

Remarks: GAS PRESSURE IS LIFTING WATER, DO NOT NATURAL FLOW.

INSTALLED VALVE ON VENT PIPE.

If any of the above data is unavailable, please indicate so. Copies of all logs, including Drillers Log, Water Analyses & Well Bore Schematics should be submitted when available. Unplugged abandoned wells are to be included.

Land Type may be shown: F-Federal; I-Indian; S-State; P-Fee.
If Federal or Indian, add Lease Number.

API WATER ANALYSIS REPORT FORM

Laboratory No. 25-930316-1M

Company		Sample No.	Date Sampled
MERIDIAN OIL			
Field	**Legal Description**	**County or Parish**	**State**
279W	H-32-30-7		
Lease or Unit	**Well**	**Depth**	**Formation**	**Water, B/D**
	S.J. 30-6 # 47	230'		
Type of Water (Produced, Supply, etc.)	**Sampling Point**	**Sampled By**
Fresh, Clear	Ground Bed	

DISSOLVED SOLIDS

CATIONS	mg/l	me/l
Sodium, Na (calc.)	420	18
Calcium, Ca	329	16.4
Magnesium, Mg	12	1
Barium, Ba		

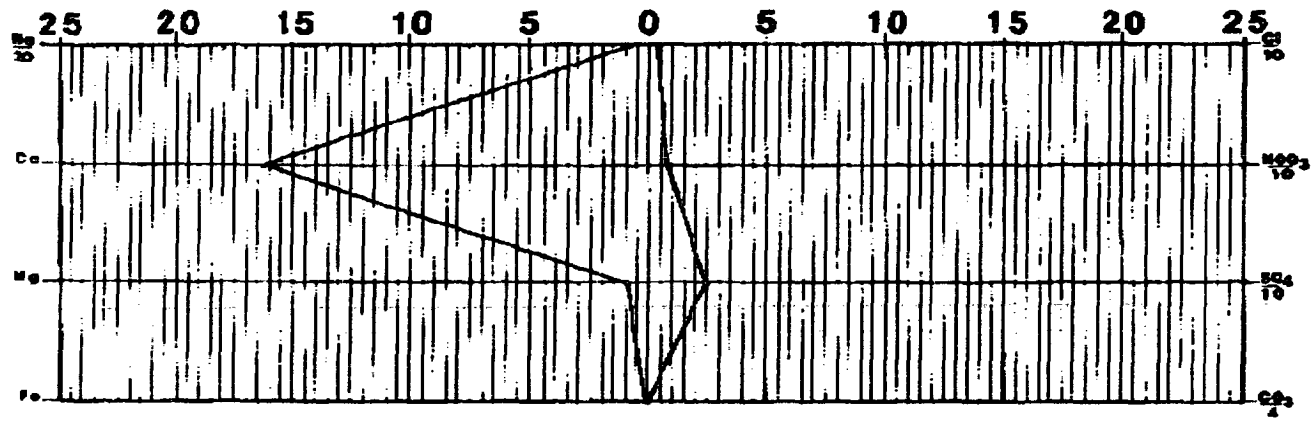
ANIONS		
Chloride, Cl	100	2.8
Sulfate, So_4	1190	24.7
Carbonate, CO_3	-	-
Bicarbonate, HCO_3	490	8

OTHER PROPERTIES

pH	7.24
Specific Gravity, 60/60 F.	1.0051
Resistivity (ohm-meters) 72 F.	3.15
Total Dissolved Solids (calc.)	2,530
Iron, Fe (total)	
Sulfide, as H_2S	

REMARKS & RECOMMENDATIONS

ATTN: BILL DONAHUE



Date Received	Preserved	Date Analyzed	Analyzed By
March 16th, 1993		March 19th, 1993.	R.H.

TECH, Inc.
333 East Main
Farmington
New Mexico
87401
505/327-3311

Post-It™ brand fax transmittal memo 7671 | # of pages ▸ 1?

To	Bill Donahue	From	Tech
Co.	Meridian	Co.	
Dept.		Phone #	327-3311
Fax #	326-9833	Fax #	328-3311

Call re 3/22

94 = 30-039-18241 4354

428 = 30-039-24381

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO
(Submit 3 copies to OCD Aztec Office)

Operator MERIDIAN OIL Location: Unit SW Sec. 28 Twp 30 Rng 7

Name of Well/Wells or Pipeline Serviced SAN JUAN 30-6 UNIT #94, #428

cps 137w

Elevation 6270' Completion Date 3/23/63 Total Depth 100' Land Type* N/A

Casing, Sizes, Types & Depths N/A

If Casing is cemented, show amounts & types used N/A

If Cement or Bentonite Plugs have been placed, show depths & amounts used

N/A

Depths & thickness of water zones with description of water when possible:

Fresh, Clear, Salty, Sulphur, Etc. N/A

Depths gas encountered: N/A

Type & amount of coke breeze used: 680 lbs.

Depths anodes placed: 80', 64', 58', 52', 46'

Depths vent pipes placed: N/A

Vent pipe perforations: N/A

Remarks: gb #1

RECEIVED
MAY 31 1991
OIL CON. DIV.
DIST. 3

If any of the above data is unavailable, please indicate so. Copies of all logs, including Drillers Log, Water Analyses & Well Bore Schematics should be submitted when available. Unplugged abandoned wells are to be included.

*Land Type may be shown: F-Federal; I-Indian; S-State; P-Fee.
If Federal or Indian, add Lease Number.

WELL CASING
CATHODIC PROTECTION CONSTRUCTION REPORT
DAILY LOG

DATE 3-23-63

WELL NAME ~~WH, Hey 4-B~~ 30-6 #94 CPS NO. 137W

LOCATION 28-30N-7W

WORK ORDER NUMBER #94-40642-50-02

ANODE HOLE DEPTH 100'

TOTAL DRILLING RIG TIME 5 hrs

DRILLING TIME FOR RECTIFIER POLE HOLE

TYPE AND SIZE BIT USED

NUMBER SACKS MUD USED 0

NUMBER SACKS LOST CIRCULATION MAT'L USED 0

ANODE DEPTHS #1 80', #2 64', #3 58', #4 52' & 46'

TOTAL LBS. COKE USED 680 lbs

ANODE OUTPUTS 12 VOLTS, #1 3.0, #2 3.2, #3 3.2, #4 3.6 & 3.4

TOTAL CIRCUIT RESISTANCE: VOLTS 11.6 AMPERES 8.4 OHMS 1.38

NUMBER FEET SURFACE CABLE CONCRETE 368'

DRILLING LOG (ATTACH HERETO).

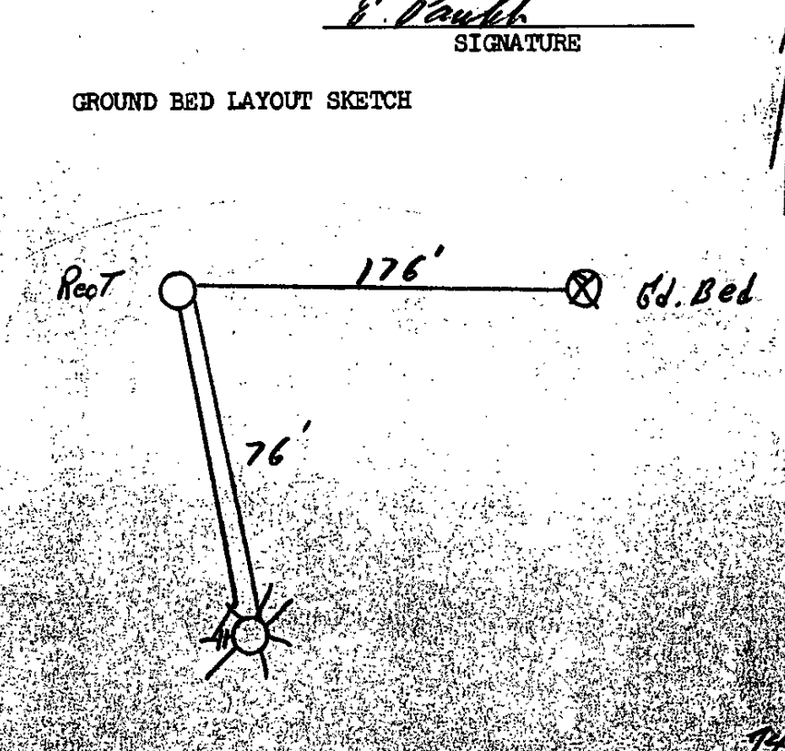
FORMATION LOG (ATTACH HERETO).

REMARKS: Static 9/5 = .71 R 600' W

ALL CONSTRUCTION COMPLETED

E. Parker
SIGNATURE

GROUND BED LAYOUT SKETCH



ORIGINAL & 1 COPY
ALL REPORTS

EL PASO NATURAL GAS COMPANY
DRILLING DEPARTMENT

DAILY DRILLING REPORT

LEASE Whitley WELL NO. V-8 CONTRACTOR L.E. Wilson RIG NO. D-2 REPORT NO. DATE 8-22 1962

MORNING					DAYLIGHT					EVENING				
FROM	TO	FORMATION	WT. BIT	R.P.M.	FROM	TO	FORMATION	WT. BIT	R.P.M.	FROM	TO	FORMATION	WT. BIT	R.P.M.
30	35	S.C.	2X											
35	100'	Sh.	"											

Morning: BIT NO. # 2X; SIZE LW; TYPE Rock; MAKE Hughes; NO. DC. ___ SIZE ___ LENG. ___; STANDS; SINGLES; DOWN ON KELLY; TOTAL DEPTH 100'

Daylight: BIT NO.; SERIAL NO.; SIZE; TYPE; MAKE; NO. DC. ___ SIZE ___ LENG. ___; STANDS; SINGLES; DOWN ON KELLY; TOTAL DEPTH

Evening: BIT NO.; SERIAL NO.; SIZE; TYPE; MAKE; NO. DC. ___ SIZE ___ LENG. ___; STANDS; SINGLES; DOWN ON KELLY; TOTAL DEPTH

MUD RECORD (Time, Wt., Vis.) — MUD, ADDITIVES USED AND RECEIVED

TIME BREAKDOWN (Daylight): Rig Time 5 hrs.

REMARKS:
8-22-62 Drilled To 40'. 2 hrs
8-23-62 " From 40' To 100' 1 Load Water 3 hrs.

SIGNED: Toolpusher ___ Company Supervisor [signature]

94= 30-039-18241
428= 30-039-24381

4353

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO
(Submit 3 copies to OCD Aztec Office)

Operator MERIDIAN OIL Location: Unit SW Sec. 28 Twp 30 Rng 7

Name of Well/Wells or Pipeline Serviced SAN JUAN 30-6 UNIT #94, #428

cps 137w

Elevation 6270' Completion Date 8/19/74 Total Depth 640' Land Type* N/A

Casing, Sizes, Types & Depths N/A

If Casing is cemented, show amounts & types used N/A

If Cement or Bentonite Plugs have been placed, show depths & amounts used

N/A

Depths & thickness of water zones with description of water when possible:

Fresh, Clear, Salty, Sulphur, Etc. 180' BIG WATER 380' - 400'

Depths gas encountered: N/A

Type & amount of coke breeze used: 11600 lbs.

Depths anodes placed: 610', 590', 575', 550', 540', 525', 495', 485', 475', 450'

Depths vent pipes placed: N/A

Vent pipe perforations: 430'

Remarks: gb #2

RECEIVED
MAY 31 1991
OIL CON. DIV
DIST. 3

If any of the above data is unavailable, please indicate so. Copies of all logs, including Drillers Log, Water Analyses & Well Bore Schematics should be submitted when available. Unplugged abandoned wells are to be included.

*Land Type may be shown: F-Federal; I-Indian; S-State; P-Fee.
If Federal or Indian, add Lease Number.

El Paso Natural Gas Company
Form 7-238 (Rev. 1-69)

WELL CASING
CATHODIC PROTECTION CONSTRUCTION REPORT
DAILY LOG

Logged

Drilling Log (Attach Hereto). ☐ Completion Date 8/19/74

Well Name	Location	CPS No.
San Juan 30-6 #94	SW 28-30N-7W	137 W

Type & Size Bit Used	Work Order No.
6 3/4"	40073

Anode Hole Depth	Total Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
640'		11,600 EST		

Anode Depth	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
	610	590	575	550	540	525	495	485	475	450
Anode Output (Amps)	2.0	1.7	2.0	2.5	2.4	1.7	1.8	2.6	2.1	1.8

Anode Depth	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20
Anode Output (Amps)										

Total Circuit Resistance				No. 8 C.P. Cable Used	No. 2 C.P. Cable Used
Volts 11.8	Amps 9.0	Ohms 1.31		115'	

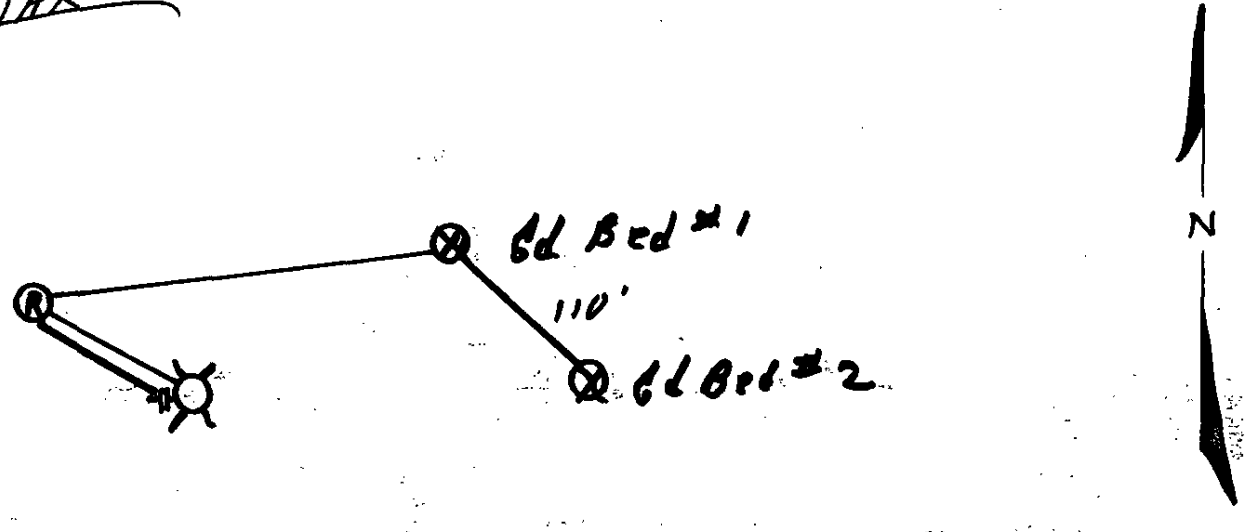
Remarks: Driller said moisture @ 150'. water @ 180'
Big water @ 380' - 400'. water standing @ 180'
After 1hr vent hose perforated 430'
Pumped ~~Four~~ Three loads water to above water zone

$3,409.00
46.00 Cable
$3,455.00
1,012.50 Extra Depth
$4,467.50
178.70 TAX
$4,646.20

All Construction Completed

Edward R. Pauls
(Signature)

GROUND BED LAYOUT SKETCH



2 Original & 1 Copy All Reports

STORM WATER WELL DRILLING INC.

DIAMOND CORE DRILLING
DIAMOND DRILLING EQUIPMENT
GROUTING
FOUNDATION TESTING
MINING
QUARRYING
SHAFT SINKING
WATER WELL DRILLING

CONTRACTORS
14991 W. 44TH AVENUE
GOLDEN, COLORADO 80401
PHONE (303) 278-9505

GENERAL OFFICE
14991 W. 44TH AVENUE
BAILEY OFFICE
CALL 1-838-4821

Drill CPS #137 W Date 8-19-74

Owner

Location
City State County

From	To	Formation	Color	Hardness
0	20	Sand	Tan	Soft
20	170	Shale	Blue Grey	Med
170	200	Sandy Shale	Grey	"
200	400	Sand	"	"
400	410	Sandy Shale	"	"
410	480	Shale	Blue	"
480	510	Sand	Grey	"
510	580	Shale & Sand	"	"
580	600	Sand	"	"
600	640	Sandy Shale	"	"
	Moisture @ 150			
	Injest @ 150			
	water @ 180			
	K @ 280-400			

Total Hours
Equipment Down Time
Hours Drilling 40
Driller Bill
Helper Ray
Helper Fred

C.P.S. Time
S.W.W.D.I. Time
Total Footage
Approval of C.P.S. Engineer

EL PASO NATURAL GAS COMPANY
ENGINEERING DEPARTMENT

Sheet
Date:
By:

137 W X = 11.9

(110)

MW		gals/mol
16	C_1	6.4
30	C_2	9.56
44	C_3	10.42
58	IC_4	12.38
"	NC_4	11.93
72	IC_5	13.85
"	NC_5	13.71
86	IC_6	15.50
"	C_6	15.57
100	IC_7	17.2
"	C_7	17.46
114	C_8	19.38
28	$C_2^=$	9.64
42	$C_3^=$	9.67

MISC.

MW		gals/mol
44	CO_2	6.38
34	H_2S	5.17
28	N_2	4.16
2	H_2	3.38

180	.3		60	.8	⑤	40	1.1	Driller said most		
	.3			.7			1.2	@ 150' water @		
90	.3		70	.7	④	50	1.2	180' big water @		
	.3			.7			1.0	380' – 400'		
200	.4		80	.7		60	.7	Vent pipe perforated		
	.4			.7			.6	430'		
10	.3		90	.6		70	.9	water standing		
	.3			.7	③		1.0	@ 180 after 1hrs		
20	.3		400	.7		80	.8			
	.1			.8			.8			
30	.1		10	.7	②	90	.8	While pumping		
	.1			.7			.7	second load water		
40	.1		20	.7		600	.7	left location		
	.2			.7			.8	come back and		
50	.4		30	.7	①	10	1.0	contractor was		
	.4			.7			.9	dry slurrying		
60	.4		40	.7		20	.7	told him to		
	.5			.8			.6	complete by		
70	.5	⑩	50	1.1		30	.9	pumping		
	.5			.8			1.0			
80	.5		60	.8		40				
	.5			.8						
90	.5		70	.9				water	coke	
	.9	⑨		1.1		1	610	1.0	2.0	
300	.8		80	1.5		2	590	.8	1.7	
	.7	⑧		1.6		3	575	1.1	2.0	
10	.7		90	1.4		4	550	1.2	2.5	
	.5	⑦		1.2		5	540	1.3	2.4	
20	.5		500	.6		6	525	.8	1.7	
	.7			.7		7	495	1.2	1.8	
30	.7		10	.7		8	485	1.7	2.6	
	.9			.8		9	475	1.2	2.1	
40	.7		20	.8		10	455	1.2	1.8	
	.8	⑥		.8						
50	.7		30	.8			1.8V	9.0A	1.31 Ω	
	.8			.8						

1504

30-039-22654

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO
(Submit 3 copies to OCD Aztec Office)

Operator MERIDIAN OIL Location: Unit NW Sec. 28 Twp 30 Rng 7

Name of Well/Wells or Pipeline Serviced SAN JUAN 30-6 UNIT #94A

cps 1693w

Elevation 6325' Completion Date 9/6/83 Total Depth 480' Land Type* N/A

Casing, Sizes, Types & Depths N/A

If Casing is cemented, show amounts & types used N/A

If Cement or Bentonite Plugs have been placed, show depths & amounts used

N/A

Depths & thickness of water zones with description of water when possible:

Fresh, Clear, Salty, Sulphur, Etc. 130' NO SAMPLE

Depths gas encountered: N/A

Type & amount of coke breeze used: 4800 lbs.

Depths anodes placed: 375', 370', 315', 310', 305', 300', 190', 185', 180', 175'

Depths vent pipes placed: 485'

Vent pipe perforations: 400'

Remarks: gb #1

RECEIVED
MAY 31 1991
OIL CON. DIV.
DIST. 3

If any of the above data is unavailable, please indicate so. Copies of all logs, including Drillers Log, Water Analyses & Well Bore Schematics should be submitted when available. Unplugged abandoned wells are to be included.

*Land Type may be shown: F-Federal; I-Indian; S-State; P-Fee.
If Federal or Indian, add Lease Number.

FM-07-0238 (Rev. 10-82)

WELL CASING

CATHODIC PROTECTION CONSTRUCTION REPORT

DAILY LOG

Drilling Log (Attach Hereto) ☑

Completion Date 9-6-83

CPS #	Well Name, Line or Plant:	Work Order #	Static:	Ins. Union Check
1693-W	S.J 30-6 #94A	59110-21-SD-20-64	-.76 600'SE	68mA ☑ Good ☐ Bad

Location:	Anode Size:	Anode Type:	Size Bit:
NW 28-30-7	2" X 60"	Duriron	6 3/4

Depth Drilled	Depth Logged	Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
480'	480'		4,800'		

Anode ~~Depth~~ Output	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
	2.40	2.20	3.70	3.90	3.60	3.40	3.00	3.40	2.90	2.90
Anode ~~Depth~~ Depth	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
	375	370	315	310	305	300	190	185	180	175
Anode Depth	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20
Anode Output (Amps)	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20

Total Circuit Resistance			No. 8 C.P. Cable Used	No. 2 C.P. Cable Used
Volts 12.3	Amps 12	Ohms 1.02		

Remarks: Drilled to 120' with only moist spots. 3 Days later Drilled to 130', Hit water, started Injection with soap. Installed 485' of 1" pvc vent pipe of which 400' was perforated. Driller Estimates Hole @ 30 to 40 g.p.m. Slurried approx 4,800 lbs Coke Down Hole. no water sample.

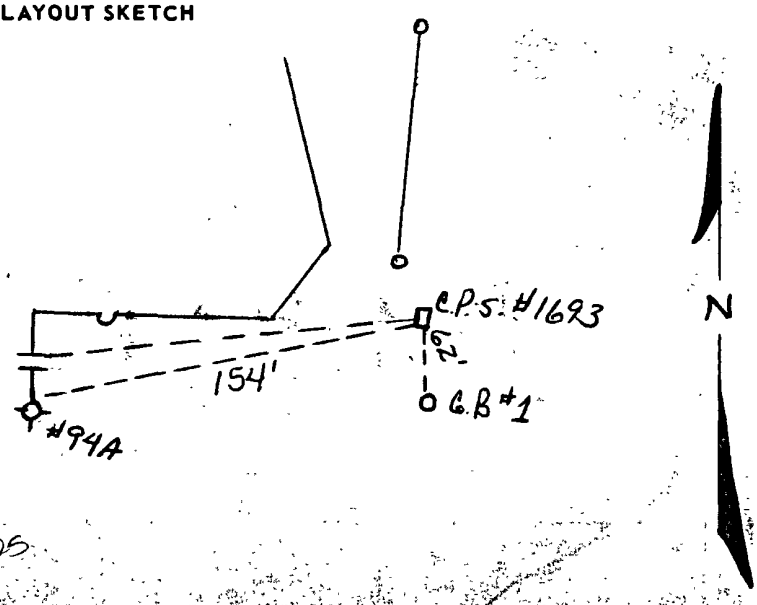
Rectifier Size: 40 V 16 A ✓
Addn'l Depth
Depth Credit: 20' ✓
Extra Cable: 169' ✓
Ditch & 1 Cable: 216' ✓
25 'Meter Pole:
20' Meter Pole: 20' mp ✓
10' Stub Pole:

Reg time	over time	
8 hrs	2 hrs	✓

All Construction Completed

C.W. Donohue
(Signature)

GROUND BED LAYOUT SKETCH



L 325

EL PASO NATURAL GAS COMPANY

DRILLING DEPARTMENT

DAILY DRILLING REPORT

LEASE SJ 30-6 WELL NO. #94A CONTRACTOR Coll.s Co. RIG NO. REPORT NO. DATE 19

MORNING

Driller Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.
130	155	Sandy Shale		
160	195	Shale		
200	295	Sandstone		
300	315	Shale		

BIT NO. DC SIZE LENG.

SER. NO. STANDS

SIZE SINGLES

TYPE DOWN ON KELLY

MAKE TOTAL DEPTH

MUD RECORD Time	Wt.	Vis.	MUD, ADDITIVES USED AND RECEIVED

FROM	TO	TIME BREAKDOWN

REMARKS –

30 to 40 g.p.m.

DAYLIGHT

Driller Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.
320	365	Sandstone		
370	375	Sandy shale		
375	480	Sandy Sandstone		

BIT NO. NO. DC SIZE LENG.

SERIAL NO. STANDS

SIZE SINGLES

TYPE DOWN ON KELLY

MAKE TOTAL DEPTH

MUD RECORD Time	Wt.	Vis.	MUD, ADDITIVES USED AND RECEIVED

FROM	TO	TIME BREAKDOWN

REMARKS –

EVENING

Driller Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.

BIT NO. NO. DC SIZE LENG.

SERIAL NO. STANDS

SIZE SINGLES

TYPE DOWN ON KELLY

MAKE TOTAL DEPTH

MUD RECORD Time	Wt.	Vis.	MUD, ADDITIVES USED AND RECEIVED

FROM	TO	TIME BREAKDOWN

REMARKS –

SIGNED: Toolpusher Company Supervisor

El Paso Natural Gas Company
ENGINEERING CALCULATION

Sheet ___ of ___
Date:
By:
File:

C.P.S. 1693-W
NW 28-30-7
S.J 30-6 #94A
WO# 59110-21-50-20-64

Stat. C = 76 600' SE
Union CK = 68mA OK

MW		gals/mol
16.04	C_1	6 4
30.07	C_2	10.12
44.10	C_3	10.42
58.12	iC_4	12.38
58.12	nC_4	11.93
72.15	iC_5	13 85
72.15	nC_5	13.71
86.18	iC_6	15.50
86.18	C_6	15.57
100.21	iC_7	17.2
100.21	C_7	17.46
114.23	C_8	19.39
28.05	$C_2^=$	9 64
42.08	$C_3^=$	9 67

MW	MISC.	gals/mol
32.00	O_2	3.37
28.01	CO	4 19
44.01	CO_2	6.38
64.06	SO_2	5.50
34.08	H_2S	5.17
28.01	N_2	4.16
2.02	H_2	3 38

Logged Thru 2,300' wire

1	30		355	.6				
	35		60	.6				
	40		65	.7				
	45	.5	70	.8	②			
	50	.6	75	.8	①			
	55	.6	80	.4				
	60	.9	85	.4				
	70	1.2	90	.3				
	75	1.1	⑥ 95	.6				
	80	1.2	④ 400	.4				
	85	1.2	③ 05	.3				
	90	1.0	⑦ 10	.4				
	95	.5	15	.4				
2	00	.3	20	.4				
	05	.3	25	.4				
	10	.3	30	.4				
	15	.2	35	.4				
	20	.2	40	.4				
	25	.2	45	.4				
	30	.2	50	.3				
	35	.2	55	.3				
	40	.2	60	.3				
	45	.2	65	.3				
	50	.5	70	.3				
	55	.4	75	.3				
	60	.3	80	TD				
	65	.3	85					
	70	.3	90					
	75	.3	95					
	80	.4	500					
	85	.4						
	90	.4						
	95	.6						
3	00	1.0	⑥					
	05	1.0	⑤					
	10	1.2	④					
	15	1.1	③					
	20	.7						
	25	.7						
	30	.7						
	35	.5						
	40	.4						
	45	.4						
	50	.6						

Drilled to 120' with only mois
spots. Drilled to 130' hit water
Started injection with soap.
Installed 485' of 1" PVC
vent pipe 400' with perforat
ions. Driller Estimates Hole @
30 to 40 g.p.m.
Slurried approx. 4,800 lbs Coke
Down Hole
Drilled: 480'
Logged: 480
NO water Sample

①	375	.90	2.40
②	370	.90	2.20
③	315	1.40	3.70
④	310	1.30	3.90
⑤	305	1.20	3.60
⑥	300	1.20	3.40
⑦	190	1.20	3.00
⑧	185	1.50	3.40
⑨	180	1.40	2.90
⑩	175	1.20	2.90

12.3 V 12A Ω 1.02

15-30-039-07757

497-30-039-28960

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO
(Submit 3 copies to OCD Aztec Office)

Operator MERIDIAN OIL Location: Unit SW Sec 29 Twp 30 Rng 7

Name of Well/Wells or Pipeline Serviced SAN JUAN 30-6 UNIT #15, #497

cps 262w

Elevation 6279' Completion Date 3/23/63 Total Depth 300' Land Type* N/A

Casing, Sizes, Types & Depths N/A

If Casing is cemented, show amounts & types used N/A

If Cement or Bentonite Plugs have been placed, show depths & amounts used

N/A

Depths & thickness of water zones with description of water when possible:

Fresh, Clear, Salty, Sulphur, Etc. N/A

Depths gas encountered: N/A

Type & amount of coke breeze used: 2145lbs

Depths anodes placed: 221', 215', 209', 203', 147', 120'

Depths vent pipes placed: N/A

Vent pipe perforations: N/A

Remarks: gb #1

RECEIVED
MAY 31 1991
OIL CON. DIV
DIST. 3

If any of the above data is unavailable, please indicate so. Copies of all logs, including Drillers Log, Water Analyses & Well Bore Schematics should be submitted when available. Unplugged abandoned wells are to be included.

*Land Type may be shown: F-Federal; I-Indian; S-State; P-Fee.
If Federal or Indian, add Lease Number.

WELL CASING
CATHODIC PROTECTION CONSTRUCTION REPORT
DAILY LOG

DATE 3-23-63

WELL NAME SAN JUAN 30-6 #15 CPS NO. 2624

LOCATION 29-30N-7W

WORK ORDER NUMBER 184-40542-50-02

ANODE HOLE DEPTH 300'

TOTAL DRILLING RIG TIME 13 hrs

DRILLING TIME FOR RECTIFIER POLE HOLE 0

TYPE AND SIZE BIT USED 0

NUMBER SACKS MUD USED 2

NUMBER SACKS LOST CIRCULATION MAT'L USED 0

ANODE DEPTHS #1 221', #2 215', #3 209', #4 203' 5 147 6 141 7 120'

TOTAL LBS. COKE USED 2145 165

ANODE OUTPUTS 12 VOLTS, #1 1.6, #2 2.3, #3 2.8, #4 1.85 1.7 6 1.87

TOTAL CIRCUIT RESISTANCE: VOLTS 11.6 AMPERES 7 OHMS 1.76

NUMBER FEET SURFACE CABLE ~~CONDUIT~~ 414'

DRILLING LOG (ATTACH HERETO).

FORMATION LOG (ATTACH HERETO).

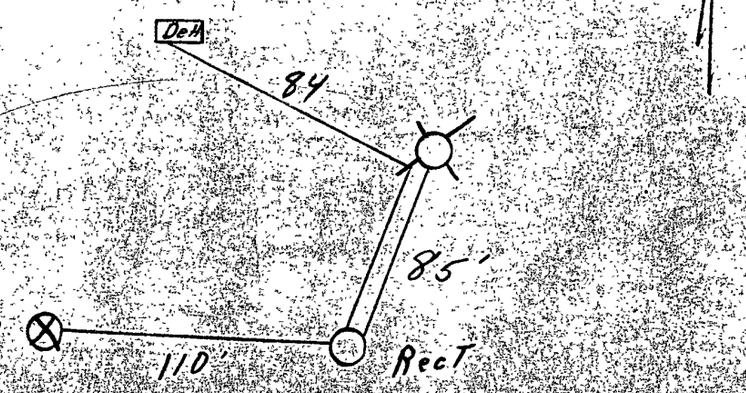
REMARKS: Static G/S = .71 R 600' S

Insulating Union on DeHydrator

ALL CONSTRUCTION COMPLETED

E. Paulek
SIGNATURE

GROUND BED LAYOUT SKETCH



ORIGINAL & 1 COPY
ALL REPORTS

1785'

DRILLING DEPARTMENT

DAILY DRILLING REPORT

LEASE San Juan 30-6 WELL NO. 15 CONTRACTOR L.E. Wilson RIG NO. D-2 REPORT NO. DATE 3-23-25 1962

MORNING

Driller Total Men In Crew 10

FROM	TO	FORMATION	WT. BIT	R.P.M.
0	31	SC.	2X	
31	300	SS. & Sh.	7516X	

BIT NO. NO. DC SIZE LENG.
SERIAL NO. 2X NO. DC SIZE LENG.
SIZE 6¼ STANDS
TYPE Rock SINGLES
MAKE Hughes DOWN ON KELLY
TOTAL DEPTH 300'

MUD RECORD Time	Wt.	Vis.

MUD ADDITIVES USED AND RECEIVED: 2 sacks Mud

FROM	TO	TIME BREAKDOWN
		Changed bits at 210'

REMARKS:
3-23-63. Drilled To 210'
3-24-63. Sunday. OFF.
3-25-63. Drilled From 210' To 300'. 2 Loads Water 6 hrs.

DAYLIGHT

Driller Total Men In Crew

FROM	TO	FORMATION	WT. BIT	R.P.M.

BIT NO. NO. DC SIZE LENG.
SERIAL NO. 7516X NO. DC SIZE LENG.
SIZE 6¼ STANDS
TYPE Rock SINGLES
MAKE W.M. DOWN ON KELLY
TOTAL DEPTH

MUD RECORD Time	Wt.	Vis.

MUD ADDITIVES USED AND RECEIVED

FROM	TO	TIME BREAKDOWN
		Rig Time 13 hrs.

REMARKS:
2 Loads Water 7 hrs.

EVENING

Driller Total Men In Crew

FROM	TO	FORMATION	WT. BIT	R.P.M.

BIT NO. NO. DC SIZE LENG.
SERIAL NO. NO. DC SIZE LENG.
SIZE STANDS
TYPE SINGLES
MAKE DOWN ON KELLY
TOTAL DEPTH

MUD RECORD Time	Wt.	Vis.

MUD ADDITIVES USED AND RECEIVED

FROM	TO	TIME BREAKDOWN

REMARKS:

SIGNED: Foreman

Company Supervisor EBP

30-039-24070

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO
(Submit 3 copies to OCD Aztec Office)

Operator Cinco Ltd. Location: Unit D Sec. 32 Twp 30N Rng 7W

Name of Well/Wells or Pipeline Serviced State Pat #1

Elevation 6186' GR Completion Date 2/5/87 Total Depth 300' Land Type* State E-178

Casing, Sizes, Types & Depths None

If Casing is cemented, show amounts & types used None

If Cement or Bentonite Plugs have been placed, show depths & amounts used

None

Depths & thickness of water zones with description of water when possible:

Fresh, Clear, Salty, Sulphur, Etc. 110'-118', Description not available
125'-135', Description not available

Depths gas encountered: Present, depth encountered not noted.

Type & amount of coke breeze used: 2200#

Depths anodes placed: 130', 140', 160', 170', 180', 210', 225', 240', 255' & 270'

Depths vent pipes placed: 300'-1" PVC

Vent pipe perforations: N/A

Remarks:

RECEIVED
FEB21 1991
OIL CON. DIV.
DIST. 3

If any of the above data is unavailable, please indicate so. Copies of all logs, including Drillers Log, Water Analyses & Well Bore Schematics should be submitted when available. Unplugged abandoned wells are to be included.

*Land Type may be shown: F-Federal; I-Indian; S-State; P-Fee.
If Federal or Indian, add Lease Number.

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO
(Submit 3 copies to OCD Aztec Office)

Operator Cinco Ltd. Location: Unit D Sec. 32 Twp 30N Rng 7W

Name of Well/Wells or Pipeline Serviced State Pat #1

Elevation 6186' GR Completion Date 2/5/87 Total Depth 300' Land Type* State E-178

Casing, Sizes, Types & Depths None

If Casing is cemented, show amounts & types used None

If Cement or Bentonite Plugs have been placed, show depths & amounts used

None

Depths & thickness of water zones with description of water when possible:

Fresh, Clear, Salty, Sulphur, Etc. 110'-118', Description not available
125'-135', Description not available

Depths gas encountered: Present, depth encountered not noted.

Type & amount of coke breeze used: 2200#

Depths anodes placed: 130', 140', 160', 170', 180', 210', 225', 240', 255' & 270'

Depths vent pipes placed: 300'-1" PVC

Vent pipe perforations: N/A

Remarks:

RECEIVED
FEB 21 1991
OIL CON. DIV.
DIST. 3

If any of the above data is unavailable, please indicate so. Copies of all logs, including Drillers Log, Water Analyses & Well Bore Schematics should be submitted when available. Unplugged abandoned wells are to be included.

*Land Type may be shown: F-Federal; I-Indian; S-State; P-Fee.
If Federal or Indian, add Lease Number.

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO
(Submit 3 copies to OCD Aztec Office)

Operator Cinco Ltd. Location: Unit D Sec. 32 Twp 30N Rng 7W

Name of Well/Wells or Pipeline Serviced State Pat #1

Elevation 6186' GR Completion Date 2/5/87 Total Depth 300' Land Type* State E-178

Casing, Sizes, Types & Depths None

If Casing is cemented, show amounts & types used None

If Cement or Bentonite Plugs have been placed, show depths & amounts used

None

Depths & thickness of water zones with description of water when possible:

Fresh, Clear, Salty, Sulphur, Etc. 110'-118', Description not available

125'-135', Description not available

Depths gas encountered: Present, depth encountered not noted.

Type & amount of coke breeze used: 2200#

Depths anodes placed: 130', 140', 160', 170', 180', 210', 225', 240', 255' & 270'

Depths vent pipes placed: 300'-1" PVC

Vent pipe perforations: N/A

Remarks:

RECEIVED
FEB 21 1991
OIL CON. DIV.
DIST. 3

If any of the above data is unavailable, please indicate so. Copies of all logs, including Drillers Log, Water Analyses & Well Bore Schematics should be submitted when available. Unplugged abandoned wells are to be included.

*Land Type may be shown: F-Federal; I-Indian; S-State; P-Fee.
If Federal or Indian, add Lease Number.

Appendix B

Executed C-138 Solid Waste Acceptance Form

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

97057-1090

Form C-138
Revised 08/01/11

*Surface Waste Management Facility Operator and Generator shall maintain and make this documentation available for Division inspection.

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

1. Generator Name and Address:
Enterprise Field Services, LLC, 614 Reilly Ave, Farmington NM 87401

Invoicing Information
PayKeyRB21200
AFE: N47089

2. Originating Site:
NEBU #345

3. Location of Material (Street Address, City, State or ULSTR):
UL G Section 29 T30N R7W; 36.786018, -107.590287

Feb 2020

4. Source and Description of Waste:
Source: Sediment/Soil/sludge from remediation activities associated with a natural gas pipeline release.
Description: Soil/Sediment/sludge associated with remediation activities.
Estimated Volume 50 (yd³ / bbls) Known Volume (to be entered by the operator at the end of the haul) 72/25 yd³ / bbls

5. GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS

I, Thomas Long (Thomas Long) , representative or authorized agent for Enterprise Products Operating do hereby
Generator Signature
certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is: (Check the appropriate classification)

☒ RCRA Exempt: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste. *Operator Use Only: Waste Acceptance Frequency* ☐ *Monthly* ☐ *Weekly* ☒ *Per Load*

☐ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items)

☐ MSDS Information ☐ RCRA Hazardous Waste Analysis ☐ Process Knowledge ☐ Other (Provide description in Box 4)

GENERATOR 19.15.36.15 WASTE TESTING CERTIFICATION STATEMENT FOR LANDFARMS

I, Thomas Long (Thomas Long) 2-12-2020, representative for Enterprise Products Operating authorizes Envirotech, Inc. to complete
Generator Signature
the required testing/sign the Generator Waste Testing Certification.

I, Greg Crabtree, representative for Envirotech, Inc. do hereby certify that representative samples of the oil field waste have been subjected to the paint filter test and tested for chloride content and that the samples have been found to conform to the specific requirements applicable to landfarms pursuant to Section 15 of 19.15.36 NMAC. The results of the representative samples are attached to demonstrate the above-described waste conform to the requirements of Section 15 of 19.15.36 NMAC.

5. Transporter: Riley Industrial/Sierra Oil Field Services and subcontractors

OCD Permitted Surface Waste Management Facility

Name and Facility Permit #: **Envirotech, Inc. Soil Remediation Facility * Permit #: NM01-0011**
Address of Facility: **Hill Top, NM**
Method of Treatment and/or Disposal:
☐ Evaporation ☐ Injection ☐ Treating Plant ☒ Landfarm ☐ Landfill ☐ Other

Waste Acceptance Status:

☐ **APPROVED** ☐ **DENIED** (Must Be Maintained As Permanent Record)

PRINT NAME: Greg Crabtree TITLE: Enviro Manager DATE: 2/12/2020

SIGNATURE: _____ TELEPHONE NO.: 505-632-0615
Surface Waste Management Facility Authorized Agent

Appendix C

Photograph Log

Photograph Log
NEBU #345 Well Tie Pipeline Release
Enterprise Field Services, LLC

Photograph #1	
Client: Enterprise	
Site Name: NEBU #345 Well Tie Pipeline Release	
Date Photo Taken: February 14, 2019	
Release Location: N36.78597, W107.59033 G-29-30N-7W Rio Arriba County, NM	
Photo Taken by: Heather Woods	Description: Facing northwest, view of the final excavation extents.

Photograph #2	
Client: Enterprise	
Site Name: NEBU #345 Well Tie Pipeline Release	
Date Photo Taken: February 14, 2019	
Release Location: N36.78597, W107.59033 G-29-30N-7W Rio Arriba County, NM	
Photo Taken by: Heather Woods	Description: Facing southwest, view of the final excavation extents.

Photograph Log
NEBU #345 Well Tie Pipeline Release
Enterprise Field Services, LLC

Photograph #3	
Client: Enterprise	
Site Name: NEBU #345 Well Tie Pipeline Release	
Date Photo Taken: July 14, 2019	
Release Location: N36.78597, W107.59033 G-29-30N-7W Rio Arriba County, NM	
Photo Taken by: Theodore Valdez	Description: Facing east, view of the reclaimed release area.

Appendix D

Correspondence

From: Long, Thomas
To: "Smith, Cory, EMNRD (Cory.Smith@state.nm.us)"; kwchristesen@blm.gov
Subject: FW: NEBU #435 - UL G Section 29 T30N R7W; 36.78597, -107.59033
Date: Friday, February 14, 2020 8:21:00 AM
Importance: Low

Cory/Kenneth,

This site name is actually the NEBU #345, not the NEBU #435.

Thomas J. Long
Senior Environmental Scientist
Enterprise Products Company
614 Reilly Ave.
Farmington, New Mexico 87401
505-599-2286 (office)
505-215-4727 (Cell)
tjlong@eprod.com

From: Long, Thomas
Sent: Thursday, February 13, 2020 2:47 PM
To: 'Smith, Cory, EMNRD (Cory.Smith@state.nm.us)' <Cory.Smith@state.nm.us>; kwchristesen@blm.gov
Cc: Stone, Brian <bmstone@eprod.com>
Subject: NEBU #435 - UL G Section 29 T30N R7W; 36.78597, -107.59033

Cory/Kenneth,

This email is to notify you that Enterprise discovered natural gas release on the NEBU #435 well tie on February 7, 2020. No liquids were released to the ground surface. The repairs began today and it was determined that this release is reportable per NMOCD regulation due to the volume of impacted subsurface soil. The release is located at UL G Section 29 T30N R7W; 36.78597, -107.59033. This email is also a notification that Enterprise will collecting soil samples for laboratory analysis tomorrow February 14, 2020 at 11:00 a.m. If you have any questions, please call or email.

Thomas J. Long
Senior Environmental Scientist
Enterprise Products Company
614 Reilly Ave.
Farmington, New Mexico 87401
505-599-2286 (office)
505-215-4727 (Cell)
tjlong@eprod.com


Enterprise
Products

Appendix E

Analytical Laboratory Report

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

February 18, 2020

Heather Woods

Rule Engineering LLC
501 Airport Dr., Ste 205
Farmington, NM 87401
TEL: (505) 325-1055
FAX:

RE: NEBU 345 OrderNo.: 2002623

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 5 sample(s) on 2/15/2020 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2002623**
Date Reported: **2/18/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-1
Project: NEBU 345
Collection Date: 2/14/2020 11:15:00 AM
Lab ID: 2002623-001 **Matrix:** MEOH (SOIL) **Received Date:** 2/15/2020 12:35:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	69	60		mg/Kg	20	2/17/2020 11:26:55 AM	50475
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	2/17/2020 9:39:48 AM	50471
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	2/17/2020 9:39:48 AM	50471
Surr: DNOP	85.6	55.1-146		%Rec	1	2/17/2020 9:39:48 AM	50471
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	19		mg/Kg	5	2/17/2020 9:38:33 AM	G66590
Surr: BFB	85.5	66.6-105		%Rec	5	2/17/2020 9:38:33 AM	G66590
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	0.14	0.094		mg/Kg	5	2/17/2020 9:38:33 AM	B66590
Toluene	0.71	0.19		mg/Kg	5	2/17/2020 9:38:33 AM	B66590
Ethylbenzene	ND	0.19		mg/Kg	5	2/17/2020 9:38:33 AM	B66590
Xylenes, Total	1.5	0.38		mg/Kg	5	2/17/2020 9:38:33 AM	B66590
Surr: 4-Bromofluorobenzene	89.3	80-120		%Rec	5	2/17/2020 9:38:33 AM	B66590

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2002623**
Date Reported: **2/18/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-2
Project: NEBU 345
Collection Date: 2/14/2020 11:33:00 AM
Lab ID: 2002623-002
Matrix: MEOH (SOIL)
Received Date: 2/15/2020 12:35:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	97	60		mg/Kg	20	2/17/2020 11:39:16 AM	50475
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**	
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	2/17/2020 10:07:14 AM	50471
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	2/17/2020 10:07:14 AM	50471
Surr: DNOP	85.8	55.1-146		%Rec	1	2/17/2020 10:07:14 AM	50471
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	19		mg/Kg	5	2/17/2020 10:02:03 AM	G66590
Surr: BFB	80.7	66.6-105		%Rec	5	2/17/2020 10:02:03 AM	G66590
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.096		mg/Kg	5	2/17/2020 10:02:03 AM	B66590
Toluene	ND	0.19		mg/Kg	5	2/17/2020 10:02:03 AM	B66590
Ethylbenzene	ND	0.19		mg/Kg	5	2/17/2020 10:02:03 AM	B66590
Xylenes, Total	ND	0.39		mg/Kg	5	2/17/2020 10:02:03 AM	B66590
Surr: 4-Bromofluorobenzene	88.1	80-120		%Rec	5	2/17/2020 10:02:03 AM	B66590

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2002623**
Date Reported: **2/18/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-3
Project: NEBU 345
Collection Date: 2/14/2020 11:45:00 AM
Lab ID: 2002623-003 **Matrix:** MEOH (SOIL) **Received Date:** 2/15/2020 12:35:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	ND	60		mg/Kg	20	2/17/2020 11:51:38 AM	50475
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	2/17/2020 10:16:24 AM	50471
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	2/17/2020 10:16:24 AM	50471
Surr: DNOP	84.0	55.1-146		%Rec	1	2/17/2020 10:16:24 AM	50471
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.7		mg/Kg	1	2/17/2020 10:25:42 AM	G66590
Surr: BFB	87.3	66.6-105		%Rec	1	2/17/2020 10:25:42 AM	G66590
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	0.070	0.019		mg/Kg	1	2/17/2020 10:25:42 AM	B66590
Toluene	0.37	0.037		mg/Kg	1	2/17/2020 10:25:42 AM	B66590
Ethylbenzene	ND	0.037		mg/Kg	1	2/17/2020 10:25:42 AM	B66590
Xylenes, Total	0.46	0.075		mg/Kg	1	2/17/2020 10:25:42 AM	B66590
Surr: 4-Bromofluorobenzene	90.4	80-120		%Rec	1	2/17/2020 10:25:42 AM	B66590

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2002623**
Date Reported: **2/18/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-4
Project: NEBU 345
Collection Date: 2/14/2020 12:01:00 PM
Lab ID: 2002623-004
Matrix: MEOH (SOIL)
Received Date: 2/15/2020 12:35:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	98	60		mg/Kg	20	2/17/2020 12:03:59 PM	50475
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**	
Diesel Range Organics (DRO)	27	8.8		mg/Kg	1	2/17/2020 10:25:33 AM	50471
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	2/17/2020 10:25:33 AM	50471
Surr: DNOP	81.9	55.1-146		%Rec	1	2/17/2020 10:25:33 AM	50471
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	18		mg/Kg	5	2/17/2020 10:49:20 AM	G66590
Surr: BFB	81.9	66.6-105		%Rec	5	2/17/2020 10:49:20 AM	G66590
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.090		mg/Kg	5	2/17/2020 10:49:20 AM	B66590
Toluene	ND	0.18		mg/Kg	5	2/17/2020 10:49:20 AM	B66590
Ethylbenzene	ND	0.18		mg/Kg	5	2/17/2020 10:49:20 AM	B66590
Xylenes, Total	ND	0.36		mg/Kg	5	2/17/2020 10:49:20 AM	B66590
Surr: 4-Bromofluorobenzene	88.0	80-120		%Rec	5	2/17/2020 10:49:20 AM	B66590

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2002623**
Date Reported: **2/18/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-5
Project: NEBU 345
Collection Date: 2/14/2020 12:20:00 PM
Lab ID: 2002623-005
Matrix: MEOH (SOIL)
Received Date: 2/15/2020 12:35:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	ND	60		mg/Kg	20	2/17/2020 12:16:19 PM	50475
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	2/17/2020 10:34:42 AM	50471
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	2/17/2020 10:34:42 AM	50471
Surr: DNOP	85.7	55.1-146		%Rec	1	2/17/2020 10:34:42 AM	50471
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	9.1	4.3		mg/Kg	1	2/17/2020 11:12:59 AM	G66590
Surr: BFB	93.1	66.6-105		%Rec	1	2/17/2020 11:12:59 AM	G66590
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	0.49	0.022		mg/Kg	1	2/17/2020 11:12:59 AM	B66590
Toluene	1.2	0.043		mg/Kg	1	2/17/2020 11:12:59 AM	B66590
Ethylbenzene	0.049	0.043		mg/Kg	1	2/17/2020 11:12:59 AM	B66590
Xylenes, Total	0.66	0.087		mg/Kg	1	2/17/2020 11:12:59 AM	B66590
Surr: 4-Bromofluorobenzene	92.7	80-120		%Rec	1	2/17/2020 11:12:59 AM	B66590

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2002623**
18-Feb-20

Client: Rule Engineering LLC
Project: NEBU 345

Sample ID: **MB-50475**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **50475**	RunNo: **66591**							
Prep Date: **2/17/2020**	Analysis Date: **2/17/2020**	SeqNo: **2288912**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-50475**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **50475**	RunNo: **66591**							
Prep Date: **2/17/2020**	Analysis Date: **2/17/2020**	SeqNo: **2288913**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.3	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2002623**
18-Feb-20

Client: Rule Engineering LLC
Project: NEBU 345

Sample ID: **MB-50471** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **50471** RunNo: **66580**
Prep Date: **2/17/2020** Analysis Date: **2/17/2020** SeqNo: **2288223** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.1		10.00		81.3	55.1	146			

Sample ID: **LCS-50471** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **50471** RunNo: **66580**
Prep Date: **2/17/2020** Analysis Date: **2/17/2020** SeqNo: **2288224** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	48	10	50.00	0	95.4	70	130			
Surr: DNOP	3.8		5.000		75.0	55.1	146			

Sample ID: **2002623-001AMS** SampType: **MS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **SC-1** Batch ID: **50471** RunNo: **66580**
Prep Date: **2/17/2020** Analysis Date: **2/17/2020** SeqNo: **2288249** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	9.1	45.62	6.942	85.3	47.4	136			
Surr: DNOP	3.7		4.562		80.4	55.1	146			

Sample ID: **2002623-001AMSD** SampType: **MSD** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **SC-1** Batch ID: **50471** RunNo: **66580**
Prep Date: **2/17/2020** Analysis Date: **2/17/2020** SeqNo: **2288250** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	9.8	48.88	6.942	81.5	47.4	136	2.03	43.4	
Surr: DNOP	3.9		4.888		79.1	55.1	146	0	0	

Sample ID: **MB-50453** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **50453** RunNo: **66580**
Prep Date: **2/14/2020** Analysis Date: **2/17/2020** SeqNo: **2288580** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	8.6		10.00		85.7	55.1	146			

Sample ID: **LCS-50453** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **50453** RunNo: **66580**
Prep Date: **2/14/2020** Analysis Date: **2/17/2020** SeqNo: **2288581** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2002623**
18-Feb-20

Client: Rule Engineering LLC
Project: NEBU 345

Sample ID: **LCS-50453** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **50453** RunNo: **66580**
Prep Date: **2/14/2020** Analysis Date: **2/17/2020** SeqNo: **2288581** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.1		5.000		82.4	55.1	146			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2002623**
18-Feb-20

Client: Rule Engineering LLC
Project: NEBU 345

Sample ID: **mb1**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **PBS**	Batch ID: **G66590**	RunNo: **66590**							
Prep Date:	Analysis Date: **2/17/2020**	SeqNo: **2288638**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	830		1000		82.7	66.6	105			

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **LCSS**	Batch ID: **G66590**	RunNo: **66590**							
Prep Date:	Analysis Date: **2/17/2020**	SeqNo: **2288639**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	94.1	80	120			
Surr: BFB	960		1000		96.1	66.6	105			

Sample ID: **2002623-001ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **SC-1**	Batch ID: **G66590**	RunNo: **66590**							
Prep Date:	Analysis Date: **2/17/2020**	SeqNo: **2288640**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	67	19	94.13	10.73	59.4	69.1	142			S
Surr: BFB	3400		3765		91.3	66.6	105			

Sample ID: **2002623-001amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **SC-1**	Batch ID: **G66590**	RunNo: **66590**							
Prep Date:	Analysis Date: **2/17/2020**	SeqNo: **2288641**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	92	19	94.13	10.73	86.8	69.1	142	32.5	20	R
Surr: BFB	3600		3765		94.6	66.6	105	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2002623**
18-Feb-20

Client: Rule Engineering LLC
Project: NEBU 345

Sample ID: **mb1**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **B66590**	RunNo: **66590**
Prep Date:	Analysis Date: **2/17/2020**	SeqNo: **2288656** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.90		1.000		90.1	80	120			

Sample ID: **100ng btex lcs**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **B66590**	RunNo: **66590**
Prep Date:	Analysis Date: **2/17/2020**	SeqNo: **2288657** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.96	0.025	1.000	0	96.0	80	120			
Toluene	0.98	0.050	1.000	0	98.0	80	120			
Ethylbenzene	0.99	0.050	1.000	0	99.0	80	120			
Xylenes, Total	3.0	0.10	3.000	0	99.6	80	120			
Surr: 4-Bromofluorobenzene	0.97		1.000		97.4	80	120			

Sample ID: **2002623-002ams**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **SC-2**	Batch ID: **B66590**	RunNo: **66590**
Prep Date:	Analysis Date: **2/17/2020**	SeqNo: **2288658** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	3.4	0.096	3.858	0.06674	87.2	78.5	119			
Toluene	3.6	0.19	3.858	0.1204	90.2	75.7	123			
Ethylbenzene	3.5	0.19	3.858	0	90.3	74.3	126			
Xylenes, Total	11	0.39	11.57	0.2222	90.2	72.9	130			
Surr: 4-Bromofluorobenzene	3.5		3.858		90.7	80	120			

Sample ID: **2002623-002amsd**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **SC-2**	Batch ID: **B66590**	RunNo: **66590**
Prep Date:	Analysis Date: **2/17/2020**	SeqNo: **2288659** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	3.1	0.096	3.858	0.06674	78.6	78.5	119	10.2	20	
Toluene	3.2	0.19	3.858	0.1204	80.6	75.7	123	10.9	20	
Ethylbenzene	3.1	0.19	3.858	0	81.0	74.3	126	10.8	20	
Xylenes, Total	9.6	0.39	11.57	0.2222	80.9	72.9	130	10.7	20	
Surr: 4-Bromofluorobenzene	3.4		3.858		89.0	80	120	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2002623**
18-Feb-20

Client: Rule Engineering LLC
Project: NEBU 345

Sample ID: **mb-50435** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS** Batch ID: **50435** RunNo: **66590**
Prep Date: **2/13/2020** Analysis Date: **2/17/2020** SeqNo: **2288662** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.94		1.000		93.8	80	120			

Sample ID: **lcs-50435** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS** Batch ID: **50435** RunNo: **66590**
Prep Date: **2/13/2020** Analysis Date: **2/17/2020** SeqNo: **2288663** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.90		1.000		89.9	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **RULE ENGINEERING LL** Work Order Number: **2002623** RcptNo: **1**

Received By: **Erin Melendrez** **2/15/2020 12:35:00 PM**

Completed By: **Erin Melendrez** **2/15/2020 1:58:27 PM**

Reviewed By: LB 2/17/2020

Chain of Custody

1. Is Chain of Custody sufficiently complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☐	No ☐	NA ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: ENM 2/15/20

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.7	Good				

Chain-of-Custody Record

Client: Rule Engineering

Mailing Address: 501 Airport Dr, Ste 205
Farmington, NM 87401

Phone #: (505) 716-2787

email or Fax#: hwoods@ruleengineering.com

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
☐ Standard ☒ Rush Same Day

Project Name: Enterprise SJ 30-6 #345

Project #:

Project Manager: Heather Woods

Sampler: Heather Woods

On Ice: ☒ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 4.5+0.2(CF)=4.7°C

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2002623	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4 (300.0)	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
2/14/20	1115	Soil	SC-1	(1) 4oz Glass	Non	-001	X	X					X			
2/14/20	1133	Soil	SC-2	(1) 4oz Glass	Non	-002	X	X					X			
2/14/20	1145	Soil	SC-3	(1) 4oz Glass	Non	-003	X	X					X			
2/14/20	1201	Soil	SC-4	(1) 4oz Glass	Non	-004	X	X					X			
2/14/20	1220	Soil	SC-5	(1) 4oz Glass	Non	-005	X	X					X			

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
2/14/20	1440	Heather M. Woods	Jennifer Walt		2/14/20	1440
2/14/20	1744			Fedex courier ENM 2/15/20	2/15/20	1235

Remarks:
Direct Bill to Enterprise
Supervisor: Miles Moore
Non-AFE:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 10557

CONDITIONS

Operator: Enterprise Field Services, LLC PO Box 4324 Houston, TX 77210	OGRID: 241602
	Action Number: 10557
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
nvelez	None	5/16/2022